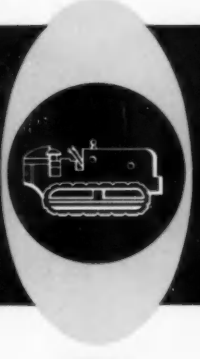
AUTOMOTIVE INDUSTRIES

MARCH 15, 1957

39th ANNUAL STATISTICAL ISSUE



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A CHILTON PUBLICATION

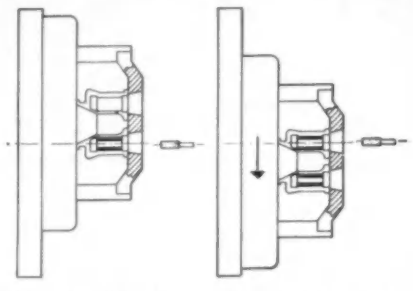
AUTO-INDEXING permits

single chucking for double bore grinding

Manually re-locating a part to grind a *second* bore takes valuable operator time. This time can be saved, in many instances, by the use of an auto-indexing fixture on a Heald Internal Grinder. For example, the Model 271 Size-Matic shown below precision grinds *two* interrupted bores in a universal joint body in a single, fully automatic, 71-second cycle.

The diagrams at right show how both bores of the work are brought in line with the grinding wheel – automatically!

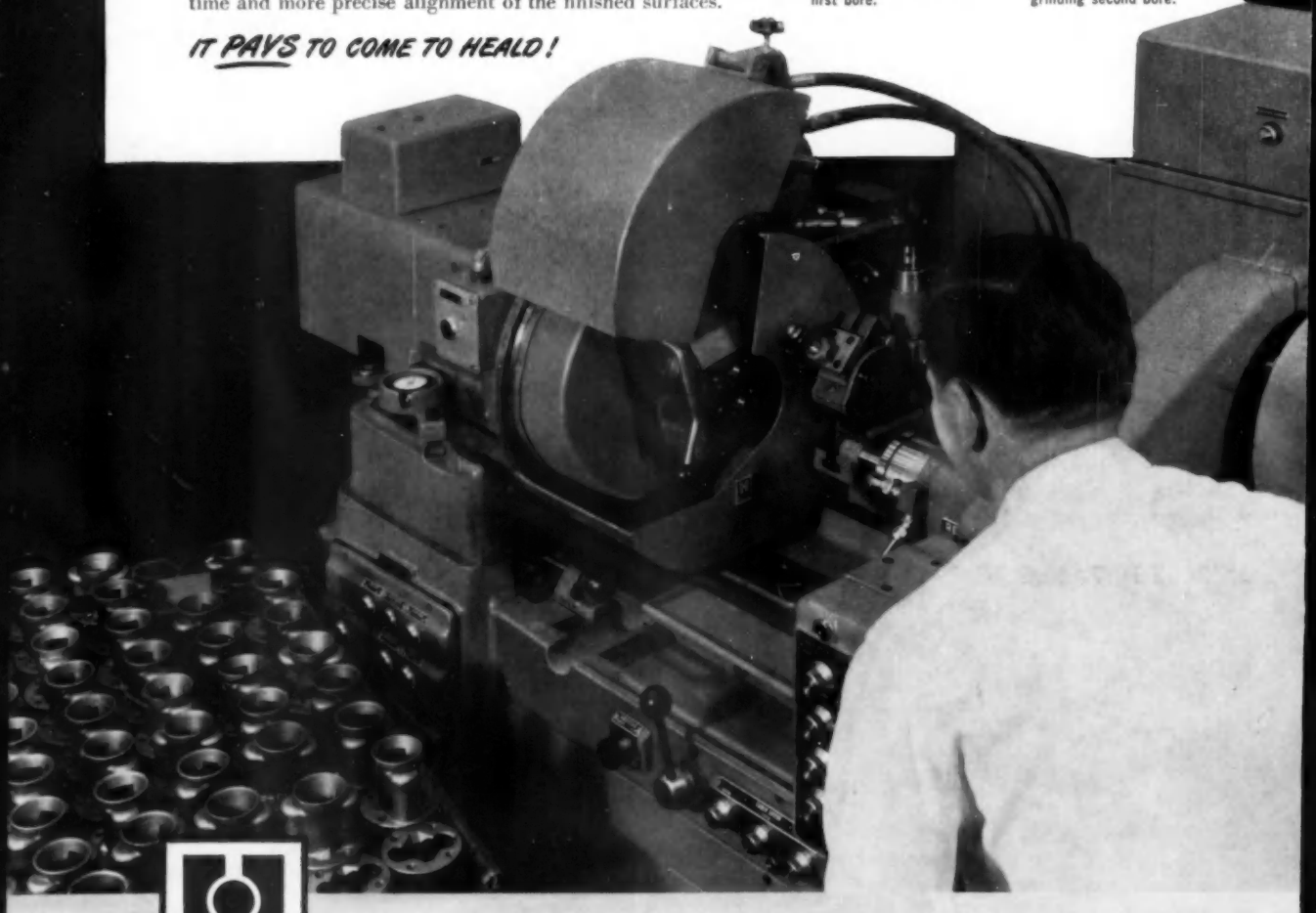
This auto-indexing feature can be used for many two-bore grinding jobs of this type with substantial savings in handling time and more precise alignment of the finished surfaces.



Auto-indexing fixture in position for grinding first bore.

Rotary cross-feed unit indexed to position for grinding second bore.

IT PAYS TO COME TO HEALD!



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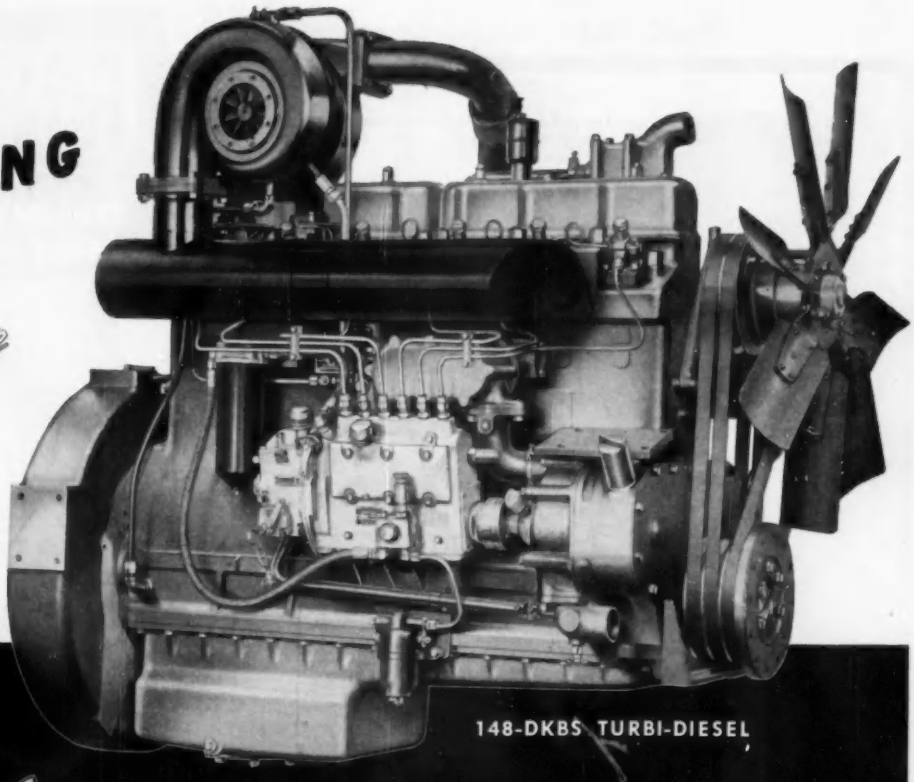
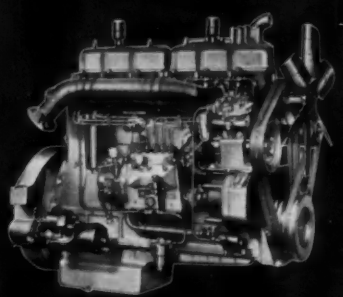
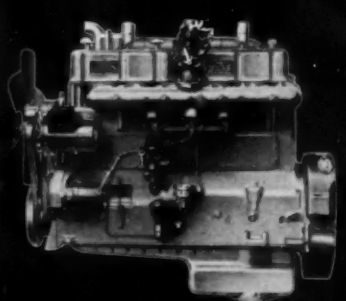


148-DKBS TURBI-DIESEL



148-DKB NORMAL DIESEL



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CASE HISTORY NO. 20—COMPRESSOR PARTS

MATTISON HIGH-POWERED PRECISION

GRINDING METHODS

Two different cast iron compressor parts are ground from the rough, holding flatness and parallelism within .001 in.

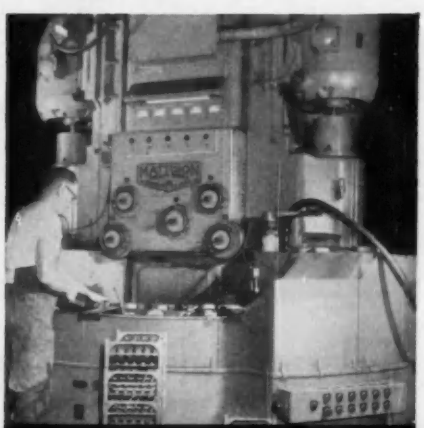
Courtesy: Whirlpool Seeger Corporation

4800 surfaces rough and finish ground in 8 hours on Mattison 5-spindle Rotary Automatic

This Mattison No. 100 5-spindle Rotary Automatic finish grinds front and back surfaces of two different compressor parts at the rate of 2400 pieces every 8-hour shift. Parts are held in special fixtures and processed from the rough by five high-powered grinding heads, holding flatness and parallelism within .001 in.

Machining of 4800 individual surfaces per 8-hour shift is a production increase of 3600 over the former rate on a single-spindle machine. One side of both parts is finished in *one pass* through the machine. The parts are turned over, and the opposite sides are finished on the second pass. Stock removal is .077 in. per side. Wheels are set so a total of .065 in. is removed by the first three wheels. The last two remove .007 and .005 in. for finishing. Automatic sizers compensate for wheel wear, keeping parts within prescribed tolerances and eliminating frequent checking.

On long run jobs, Mattison Rotary Automatics are an advanced, high-production method for machining flat surfaces. Write for *new* Bulletin No. 147-2.



Continuous single-pass grinding on the rotary automatic produces more parts, more accurately, at the lowest possible cost.

MATTISON MACHINE WORKS ROCKFORD, ILL. U.S.A.

HIGH-POWERED PRECISION SURFACE GRINDERS

AUTOMOTIVE INDUSTRIES

A CHILTON MAGAZINE — PUBLISHED SEMI-MONTHLY

MARCH 15, 1957 — VOL. 116, NO. 6

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save space,
increase production,
hold close tolerances at

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The part in the particular operation shown is a carriage used in a pressure-ratio transducer. Tolerance specifications require that all bores be within .0005 of centerline of each other.

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Four Burgmaster drills, each carrying six spindles, take up about 15 feet of space at AiResearch, while next to them a line of 20 single-spindle machines occupies three times the space.

The Burgmaster contributes to increased production and more proficient operation by operators, since it permits them to perform in one place a job requiring various types of spindles, which would otherwise necessitate moving back and forth on a line of conventional spindles. It allows use of a stationary jig for operations of various depths and sizes.

Tolerances within .0005 and less can be consistently maintained by the Burgmaster 1C on ream and bore diameters, with .0003 to .0005 on hole locations in jig work."

The Burgmaster 1C 6-spindle turret drill is a sensitive feed, fast operating machine. It features such important benefits as power indexing, preselective speeds and stops, time savings and increased accuracy by elimination of quick change tools. It easily handles holes up to ⅜" in steel. Larger capacity Burgmasters, both manual and automatic hydraulic are available.

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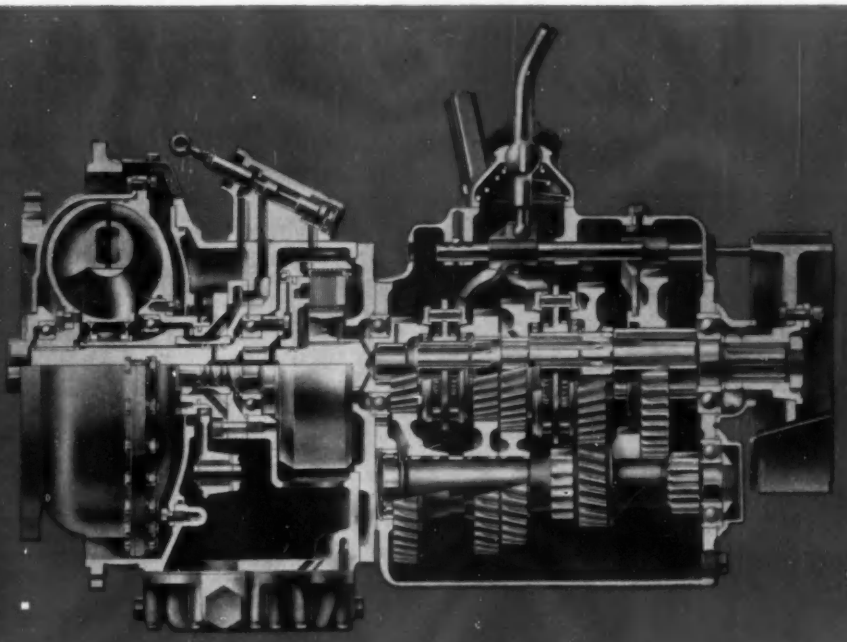
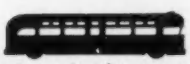
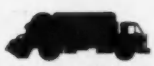


with a CLARK *TRANSVERTER*

Trucks Operating on delivery schedules



Coaches making frequent stops



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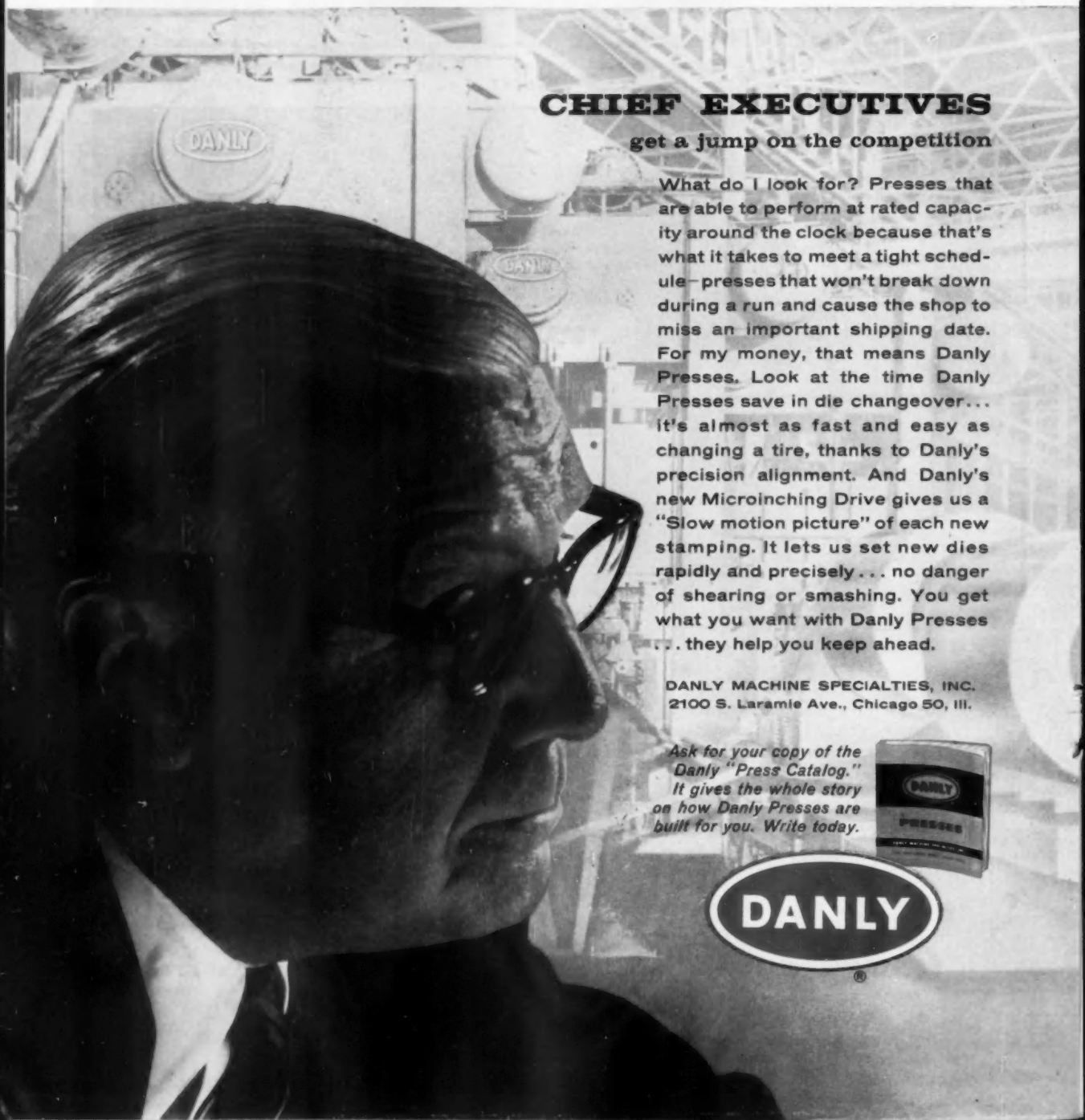

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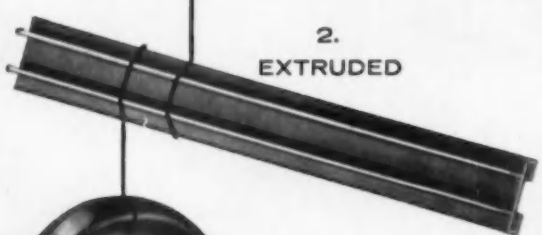

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Right now Acadia is precisely meeting all manner of rubber specifications. Very often Acadia helps users to find a better, less costly way.

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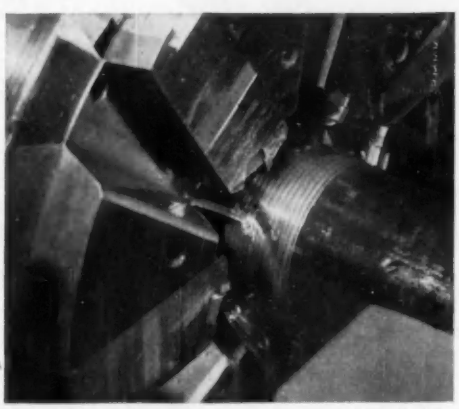

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DYNAMATIC®

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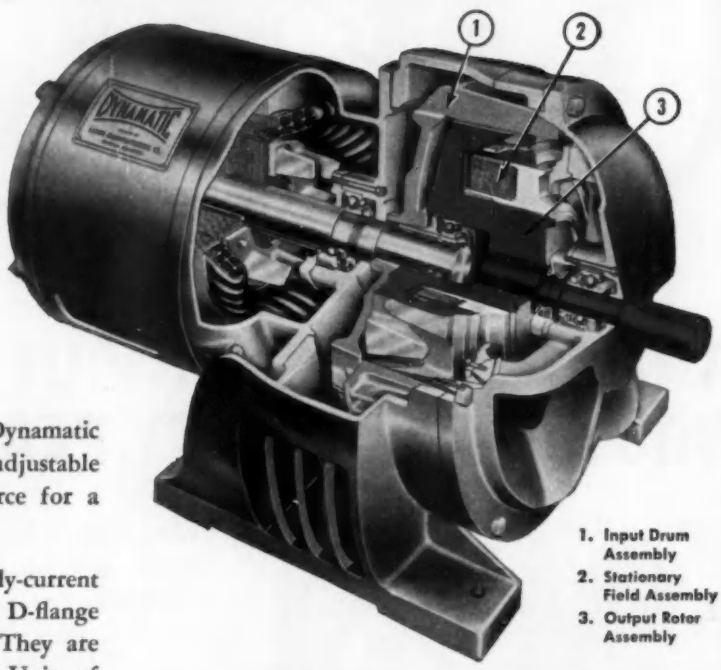

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2. Stationary Field Assembly
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Low power losses • Simple construction
Rapid response • Low maintenance cost
Quiet, efficient operation • Remote control

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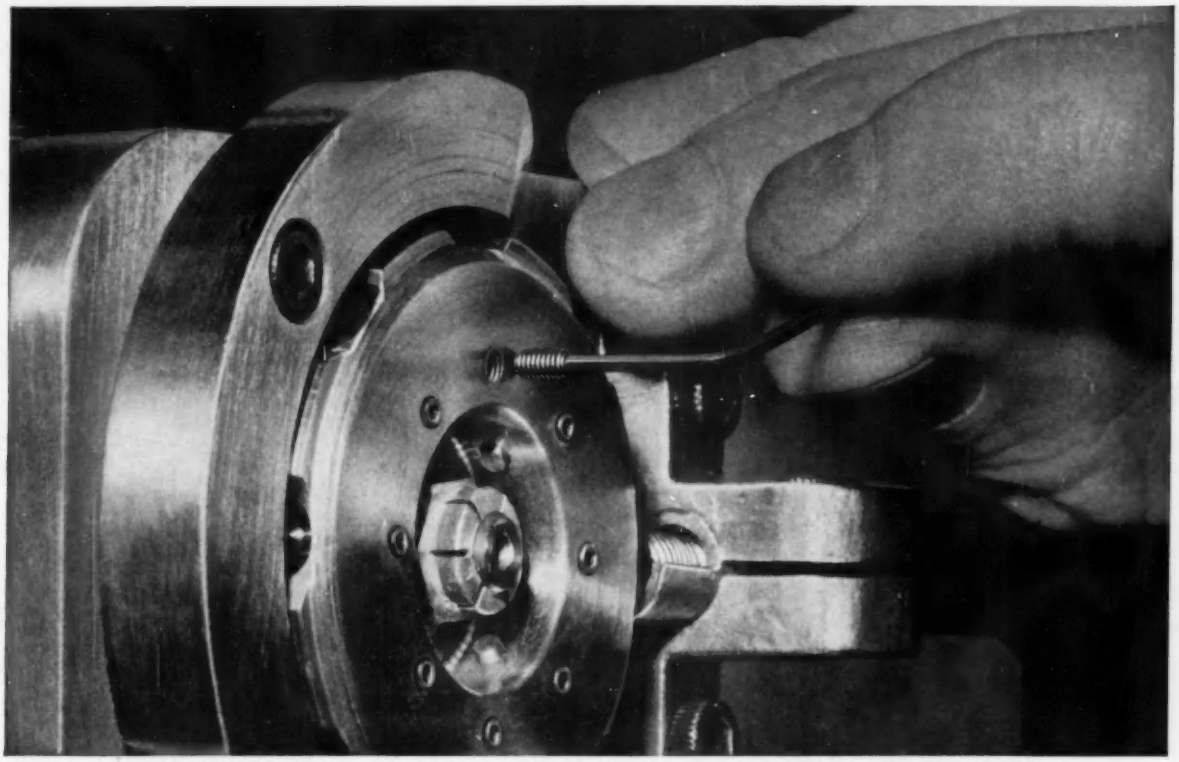

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Miniaturize with UNBRAKO set screws

HEAT-TREATED ALLOY STEEL*
PLAIN CUP POINT
Class 3 Fit Standard

Diameter	Threads per inch NC	Threads per inch NF	L Overall Length	Recommended Installation Torque in Inch-Pounds NC	Recommended Installation Torque in Inch-Pounds NF	Weight per Box of 100 in Pounds
	..	80	1/16	..	.5	.01
	..	80	3/32	..	.5	.01
#0 D .060 F .028	..	80	1/8	..	.5	.01
	..	80	5/32	..	.5	.01
	..	80	3/16	..	.5	.01
	..	80	1/4	..	.5	.01
	..	72	1/16	..	1.5	.02
	..	72	3/32	..	1.5	.02
#1 D .073 F .035	..	72	1/8	..	1.5	.02
	..	72	5/32	..	1.5	.02
	..	72	3/16	..	1.5	.02
	..	72	1/4	..	1.5	.02
	56	..	1/16	1.5	..	.03
	56	..	3/32	1.5	..	.03
#2 D .086 F .035	56	..	1/8	1.5	..	.03
	56	..	5/32	1.5	..	.03
	56	..	3/16	1.5	..	.03
	56	..	1/4	1.5	..	.03
	48	..	3/32	5.0	..	.04
#3 D .099 F .050	48	..	1/8	5.0	..	.04
	48	..	5/32	5.0	..	.04
	48	..	3/16	5.0	..	.04
	48	..	1/4	5.0	..	.04

*Also available in stainless steel

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UNBRAKO screws are made of carefully selected alloy steel. They are manufactured to timepiece precision. Sockets are deep and uniform for greatest wrench engagement and longest reuse. Threads are fully formed for maximum strength and exact fit. And UNBRAKOS are heat treated to the optimum condition for high tensile strength and ductility without brittleness or decarburization.

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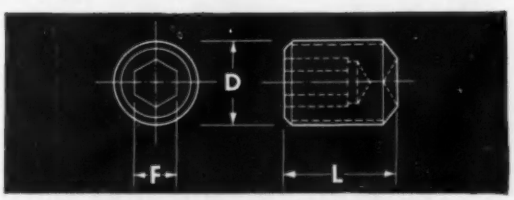

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UNBRAKO SOCKET SCREW DIVISION
SPS
JENKINTOWN PENNSYLVANIA

ROADBUILDING EQUIPMENT sets the pace for modern highway construction. It is exposed to all kinds of weather, needs the positive protection offered by the Granodine coating and the paint finish it so tenaciously bonds to the metal.

ACP Granodine® ANCHORS THE FINISH

ON FARM AND CONSTRUCTION EQUIPMENT

FARM EQUIPMENT, TOO, must be protected under good and bad weather conditions. ACP Granodine phosphate coating under paint affords this extra needed protection.

TRUCKS AND TRACTOR-TRAILERS work night and day all year round. Ice and snow, rain and heat attack the paint finish. ACP Granodine anchors it.

Weather, dirt and abrasion are archenemies of farm and construction equipment. To protect the metal, a durable and tenacious paint finish is required. ACP Granodine provides the base for such a finish. It chemically converts steel surfaces to a nonmetallic phosphate coating. This base not only increases the adhesion of the finish, but also greatly improves the corrosion resistance of the finishing system even when used in conjunction with a relatively thin and flexible paint film. ACP Granodine coatings are economically applied to steel surfaces by dipping, spraying or brushing.

LEARN ALL ABOUT ACP GRANODINE. Bulletin 1380 describes the various types of ACP Granodine and gives information which will help you select the proper type for your particular application. Write for your copy today.

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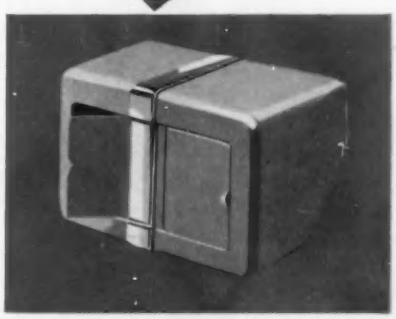
. . . as EVANS HEATERS are right for trucks!

The cowboy's gear is picturesque yet practical. From sombrero to spurs it's designed to help him do a special job. Evans Heaters are designed and engineered to do a special job, too—a truck-heating job—and Evans Heaters are right for trucks because they're built for trucks!

An Evans Truck Heater provides maximum comfort by flooding the cab with a constant stream of well-heated fresh air which keeps the driver warm and alert, the windshield free from ice and snow. The safety factor increases, so you actually get additional "cargo insurance."

The best materials and the best manufacturing methods are combined to produce these rugged Evans units that deliver high-volume heat with a minimum of maintenance. Every unit is backed by a "repair or replace" parts warranty good for a full year or 50,000 miles.

If you have a stubborn heating problem, Evans engineering advice is yours without cost. For this free service, or a complete catalog of Evans Heaters, write Heating and Ventilating Division, Evans Products Company, Department P-3, Plymouth, Michigan.

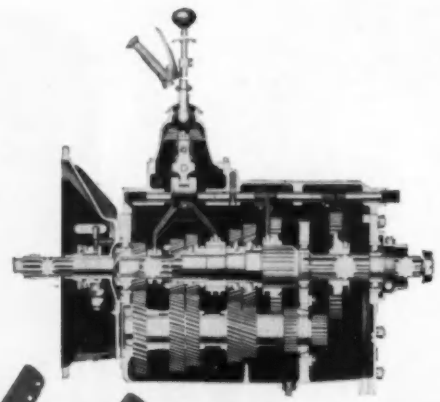


EVANS HEATERS ARE RIGHT FOR TRUCKS
BECAUSE THEY'RE BUILT FOR TRUCKS

REGIONAL REPRESENTATIVES: Cleveland, Frank A. Chase Chicago, R. A. Lennox Co., Inc. • Detroit, Chas. F. Murray Sales Co. • Allentown, Pa., P. R. Weidner

EVANS PRODUCTS COMPANY also produces:
railroad loading equipment; bicycles and velocipedes; Evaneer fir plywood; fir lumber; Evanite hardboard and Evanite battery separators.

Model R-35



A NEW Lighter 7

in a compact package . . . for having up to 400 cu. in. of piston

Now, all the advantages of the big, rugged, service-tried-and-tested Fuller ROADRANGER Transmissions are packaged for the first time in this smaller, new R-35 ROADRANGER Transmission. This 7-speed ROADRANGER is designed to provide drivers of smaller trucks and tractors with the same positive ROADRANGER control—the same ease of shifting provided by the larger ROADRANGERS.

With the R-35 ROADRANGER, shifts are simple, short, fast. Yet the driver has 7 forward speeds available in progressive and selective steps, with closely spaced and equal ratios in the operating range. The 7 forward speeds, and 1 reverse, are shifted by a single lever—there is no gear splitting. It is a *unit* transmission with 7 speeds—there is no auxiliary section.

Regardless of time, traffic and terrain, the Fuller R-35 ROADRANGER Transmission gives the driver *immediate and complete control* of every operating situation.

Owners and operators can *now* specify the R-35 ROADRANGER Transmission. They can now obtain the same results provided by the larger ROADRANGER Transmissions . . . faster trip time, lower fuel consumption, longer engine life, less driver fatigue. For complete details, check with your truck dealer today, or write Fuller Manufacturing Company.

RATIOS

Gear	Standard*	Optional**	% Step
Seventh	1.00	1.00	*33 24**
Sixth	1.33	1.24	34.8
Fifth	1.794	1.67	34.8
Fourth	2.416	2.25	36.5
Third	3.298	3.06	48.6
Second	4.90	4.55	67.3
First	8.20	7.62	67.3
Reverse	7.63	7.09	

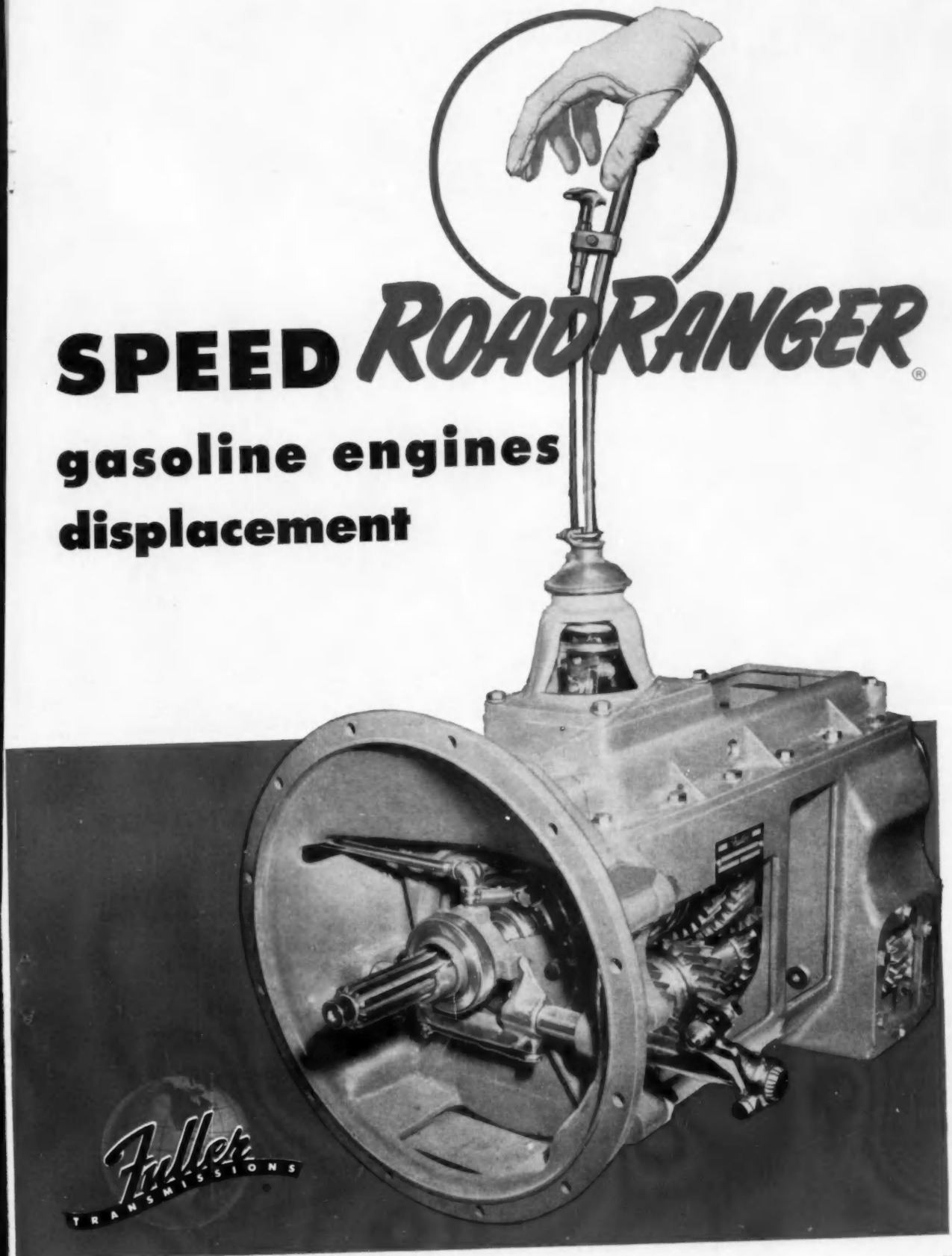
Weight . . . . . 375 lbs.
Oil Capacity . . . 16 pts.

- **No gear splitting—7 selective and progressive gear ratios**
- **Easier, quicker shifts—closely spaced and equal ratios in the operating range**
- **One shift lever controls all 7 forward and 1 reverse speeds**
- **Engines work in peak hp range with greater fuel economy**
- **Less driver fatigue—⅓ less shifting**
- **Compact unit transmission—only 375 lbs., approximately 26 25/32 inches in length**

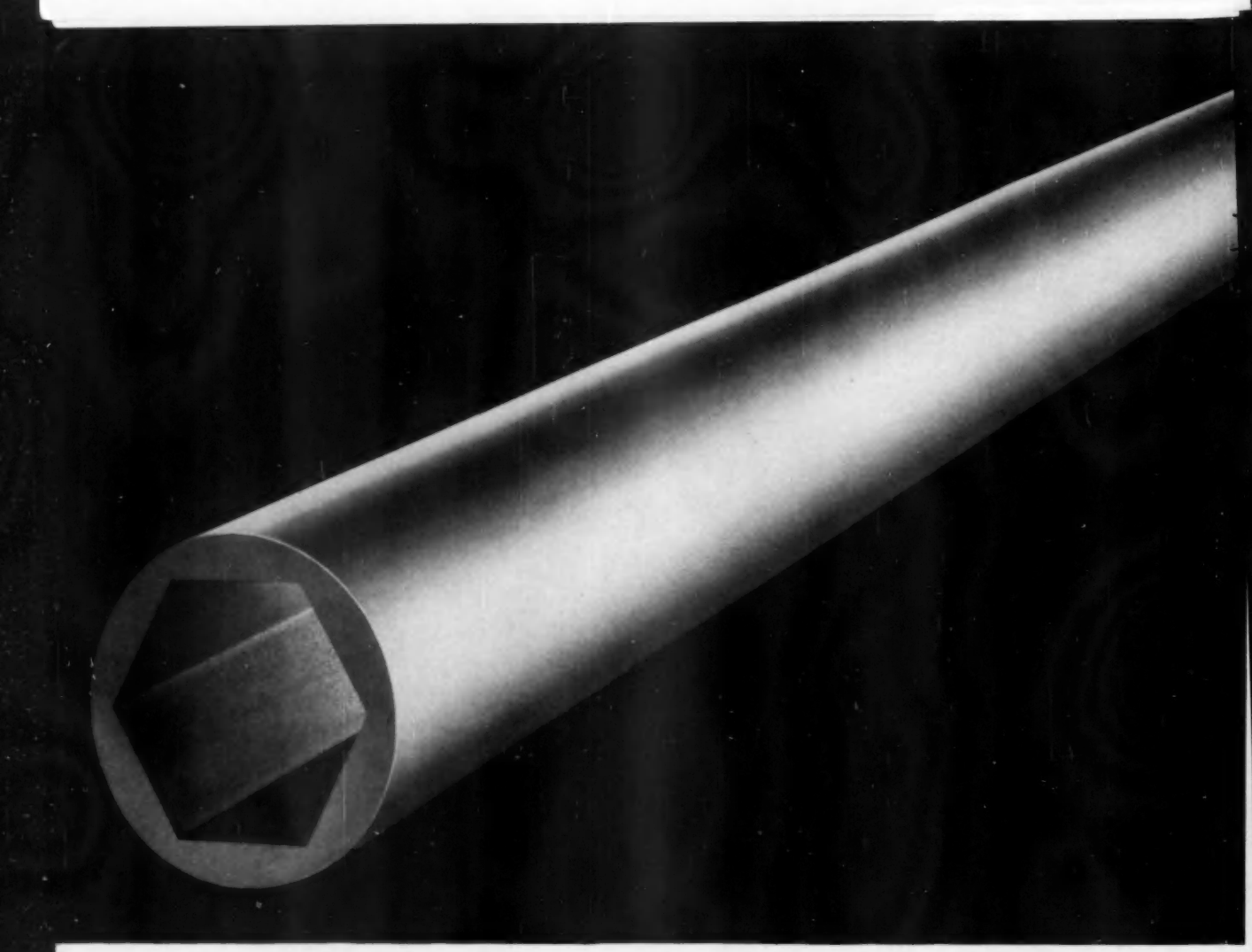
FULLER MANUFACTURING COMPANY, *Transmission Division*, Kalamazoo, Michigan

SPEED ROADRANGER®

gasoline engines displacement



Fuller TRANSMISSIONS



EVER TRIED MACHINING A SPECIAL I.D. SHAPE?

—in stainless steel, with each part 22 inches long, the outside diameter a shade over 2 inches and with tolerances of +.000" to —.010" across the flats?

On jobs like this, there's possible trouble ahead if you start with solid stock, or even round heavy wall tubing. Machining problems, surface finishing, scrap loss, special cutting oils or compounds—added to the original stock cost may make the final cost of the part prohibitive.

There is one sure way of minimizing your production problems and costs involving hollow cylindrical parts and products—*DESIGN WITH B&W MECHANICAL TUBING.*

Before you start your next production run, call Mr. Tubes at your nearby B&W Tubular Products Division District Sales Office—let him match tubing steels, types, finishes, shapes and tolerances to your applications—he will show you how to keep final costs low. Or write for bulletins 361 and 340. The Babcock & Wilcox Company, Tubular Products Division, Beaver Falls, Pa.

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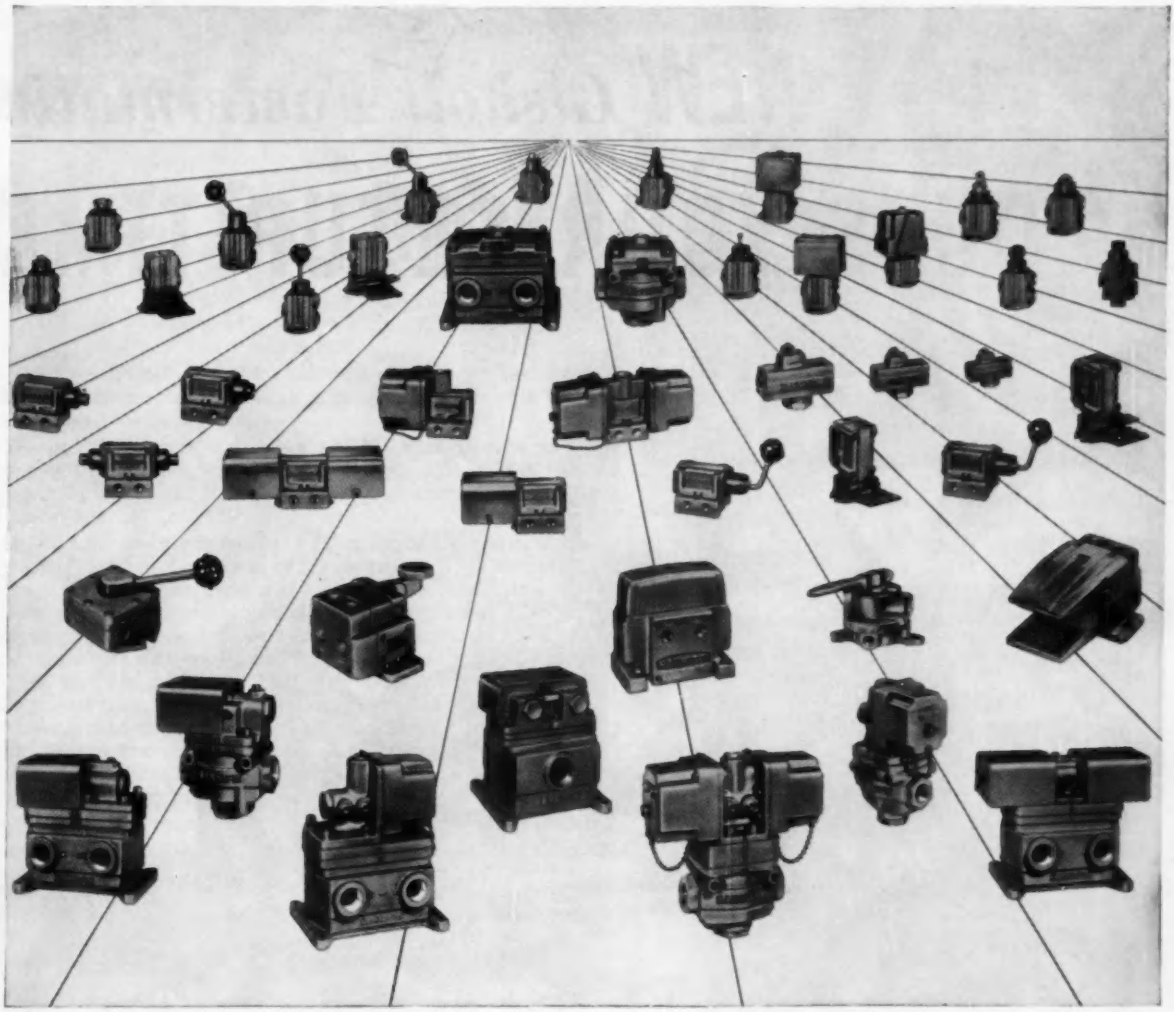
Seamless and welded tubular products, seamless welded fittings and forged steel flanges—in carbon, alloy and stainless steels.



These valves like tough jobs

Discriminating engineers are finding that out. More and more of them are specifying Hannifin valves for every kind of directional air control—including the really tough jobs.

There are plenty of reasons why: Inspired simplicity of design. Fewer parts—and *those* easily and quickly replaceable. Ability to serve a wide range of applications with fewer valve models. And—above all—fast, smooth operation.

Your Hannifin man will gladly give you the whole story. We'll tell you where to get in touch with him—after you examine the big Hannifin catalog.

AIR CONTROL

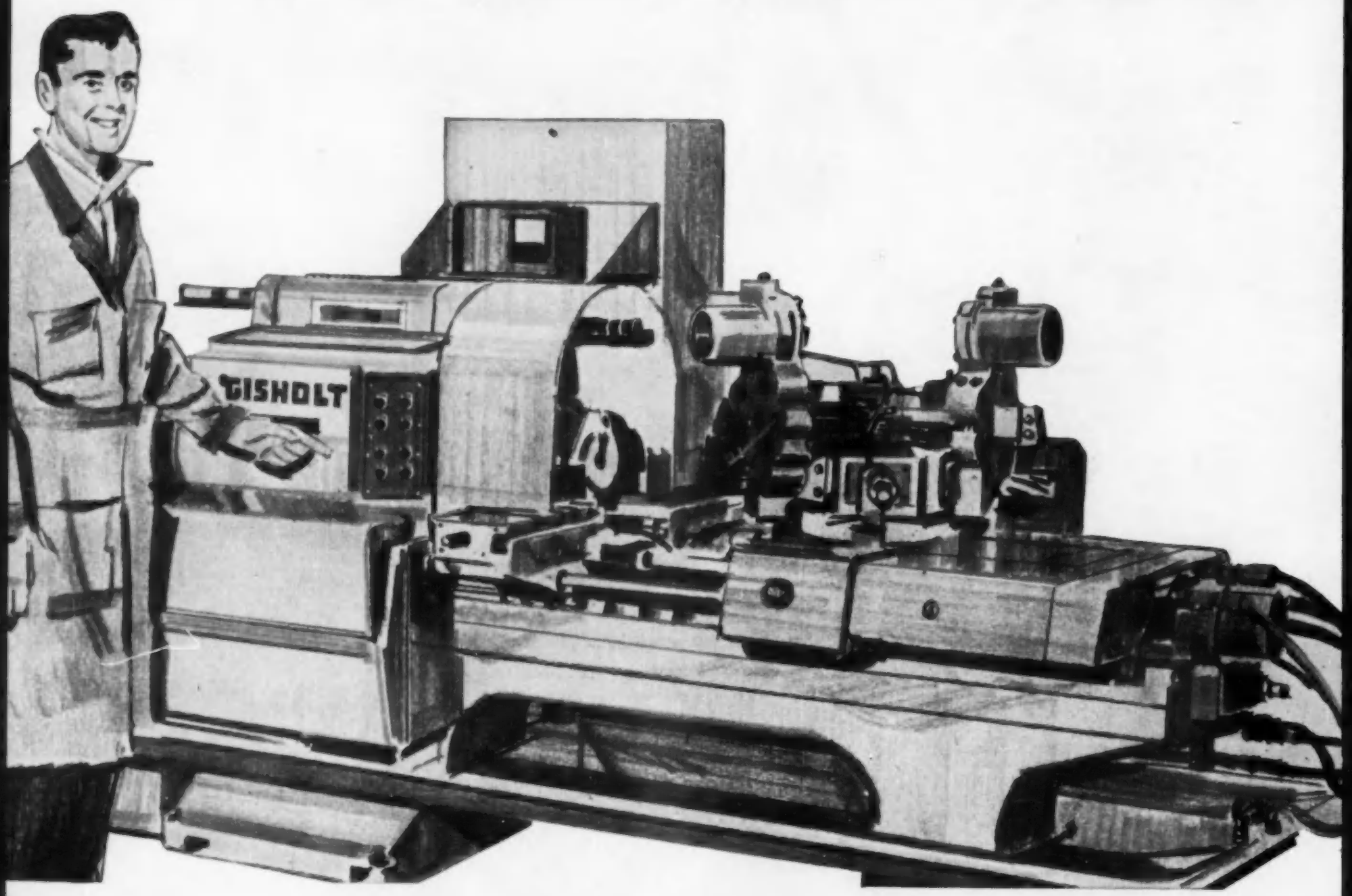
HANNIFIN

VALVES

For this complete catalog **showing all the Hannifin directional air control valves, write to Hannifin Corporation, 543 South Wolf Road, Des Plaines, Illinois.**

NEW Gisholt Fastermatic

CUTS YOUR SETUP TIME



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Madison 10, Wisconsin

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TURRET LATHES • AUTOMATIC LATHES • SUPERFINISHERS • BALANCERS • PACKAGING MACHINES • MOLDED FIBERGLAS PLASTICS

control panel

50% OR MORE

NEW GISHOLT FASTERMATIC CONTROL PANEL—simple toggle switches govern basic machine functions, cutting initial setup time in half. Master reference card is used to cut setup time still more on re-runs.

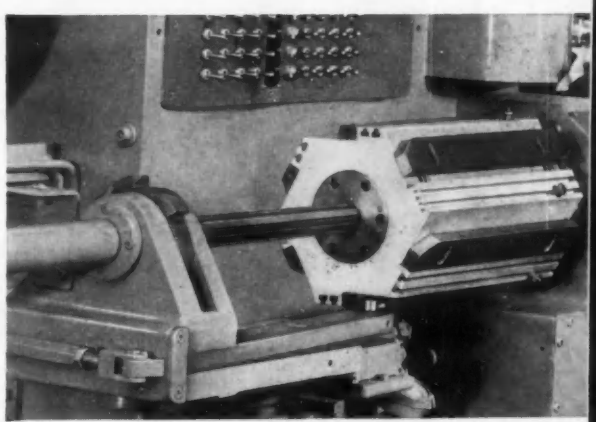
BY SIMPLY FLIPPING TOGGLE SWITCHES, your operators can cut automatic turret lathe setup time 50% or more with this electric setup control panel.

Thoroughly proved in production lines, this control panel is one of the many advanced features available on the new Gisholt MASTERLINE Fastermatic Automatic Turret Lathe.

Here's how the panel works: within finger-tip reach, your operator has a horizontal row of toggle switches for each face of the hexagon turret. By simply flipping the switches right or left, he pre-selects desired machine functions. Re-runs? Here the Fastermatic makes even more drastic cuts in setup time. A master reference card, made from the previous run, is used, and the machine is ready to go with absolute minimum preparation. Feed changes are fast and easy. Tool overhang is quickly minimized by re-positioning the saddle. Anywhere within the machine cycle, the operator can make a trial cut, withdraw the tools, mike the part, re-set the tools and resume forward feed.

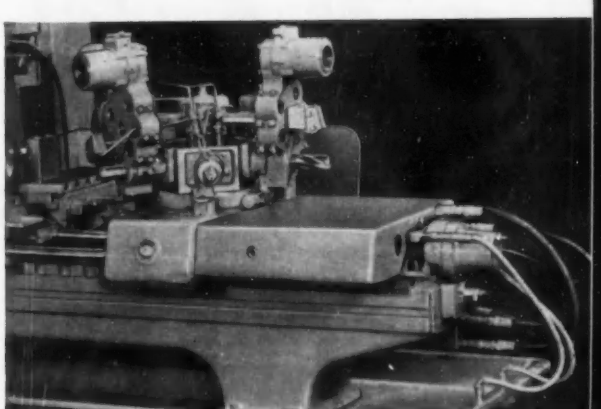
What does this versatility mean to your own operations? It means more time spent cutting chips and more profit per piece. It means that less skill is required of the operator and he is free to handle additional units or do other work during machining cycles. It means you can utilize smart tooling and eliminate human errors...get record production on long runs ...*and also get the advantages of automatic cycle operation on relatively short runs.*

Ask your Gisholt Representative to tell you about the Fastermatic's new electric control panel...its increased capacity...its higher speeds and feeds and heavier construction. You'll also want to know about using the Gisholt JETracer on the Fastermatic. Call him today—or write Gisholt for literature...ask for Bulletin No. 1179.

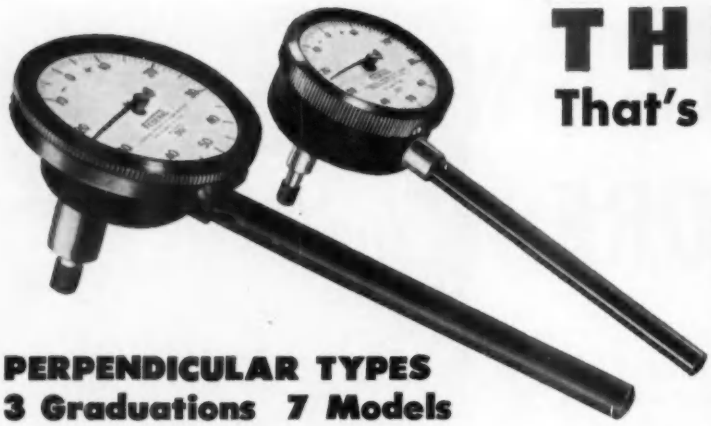


HEXAGON FEED CONTROL DRUM—positioning of adjustable flat bars on each face determines rate of feed. Thumbscrew actuator pins in slots on each face determine point of change from traverse to feed and length of feed.

GISHOLT JETracer—mounts on any one of Fastermatic's turret stations. Provides exceptional accuracy for turning, boring or facing—either straight, taper or contour. Hydraulically operated; stylus follows contour of template controlling movement of single-point tool on sliding member.



FASTERMATIC TURRET SADDLE is hydraulically powered for indexing and longitudinal movement. Automatic cycle easily set up with turret double- or triple-tooled. CROSS SLIDES—front and rear—operated by forward movement of turret saddle, can work independently, or together, with any turret face.



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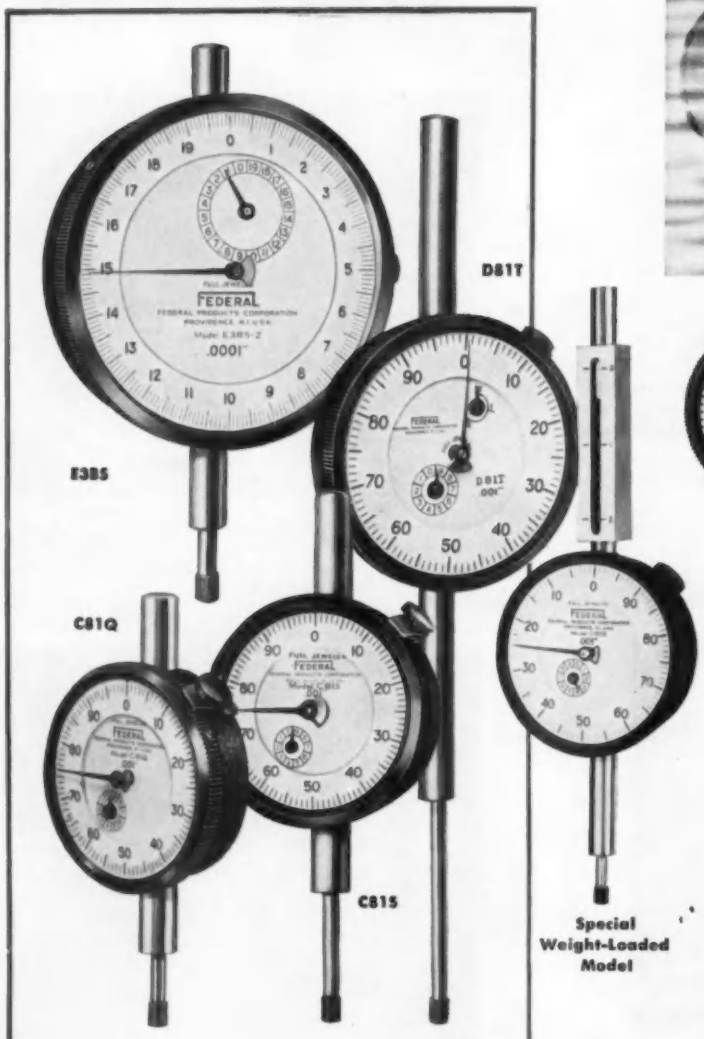
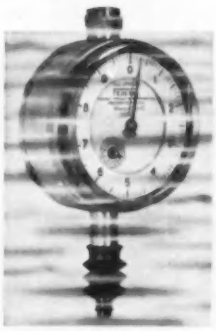
You get the benefits of doing business with a company which consistently offers improvements and new ideas.

You get a known accuracy and dependability built up over years of development and experience.

You save the confusion of stocking and maintaining several different makes of instruments.

LONG RANGE MODELS





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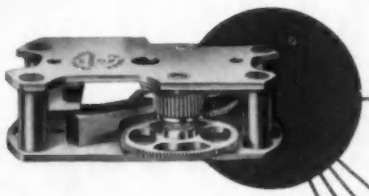

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Assures Perfect Alignment
Positive Adjustment — Rigidity —
High Accuracy . . .

Maintenance men tell us repeatedly it is the easiest to repair.

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ANY GRADUATION
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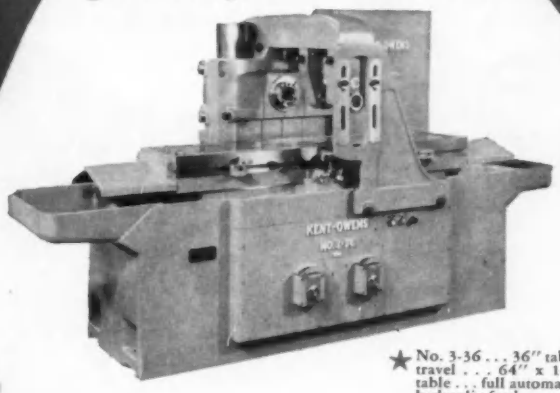
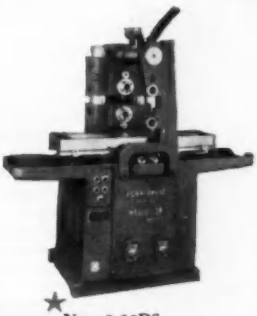
Every one a Star

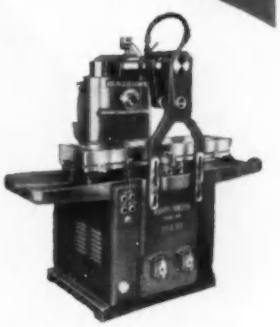
for speedy accurate milling!



★ No. 3-36 . . . 36″ table travel . . . 64″ x 16″ table . . . full automatic hydraulic feed.

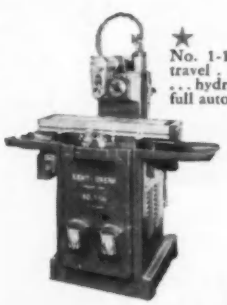


★ No. 2-20DS . . . Double Spindle for two milling operations . . . 20″ table travel . . . 42″ x 12″ table. Hydraulic feed.

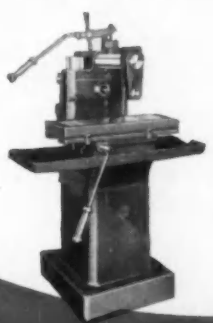


★ No. 2-20 . . . 20″ table travel . . . 42″ x 12″ table . . . full automatic hydraulic feed.

You'll turn out milling jobs with stepped up speed and accuracy with the work on Kent-Owens Machines! These extra-rugged Millers are performance-proved . . . simple . . . versatile . . . practical in every detail. Advanced features throughout! Twin-post head mounting assures balanced load. Only two gear contacts, motor to spindle, means greater cutting efficiency. Check your needs! Write today for bulletins on wide range of hydraulic and hand-operated machines. Also, let Kent-Owens design and build your tooling and special machines. Kent-Owens Machine Co., Toledo, Ohio.



★ No. 1-14 . . . 14″ table travel . . . 32″ x 9″ table . . . hydraulic table feed . . . full automatic cycle.



★ No. 1-M . . . Hand feed to table and head . . . 25″ x 9″ table travel . . . head counter-balance is adjustable.

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for milling machines

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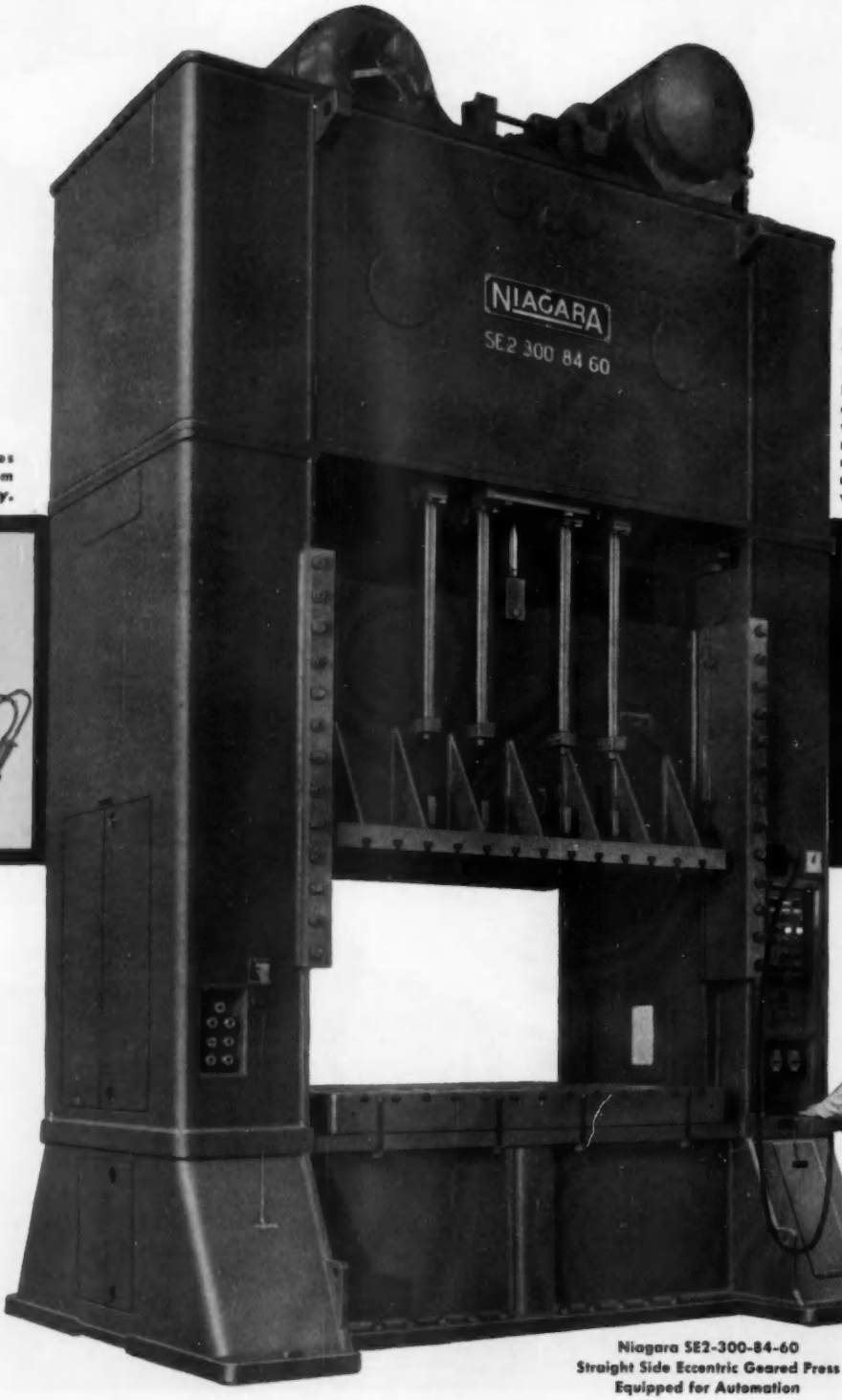
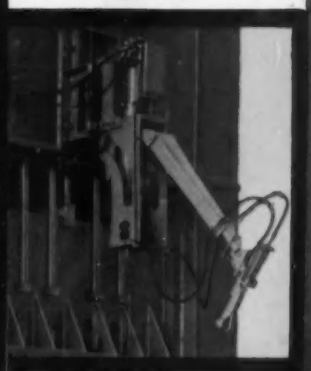
see how mighty Niagara Presses



IRON HAND removes finished stampings from the press, *automatically*.

BRAIN CENTER OF THE AUTOMATION SYSTEM, the Rotary Limit Switch can be adjusted precisely while the press is in motion to synchronize automation mechanical devices with the press cycle.



Niagara SE2-300-84-60
Straight Side Eccentric Geared Press
Equipped for Automation

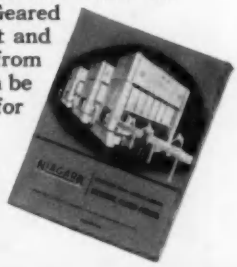
are automated for peak productivity

Engineered to excel in large, heavy tonnage drawing, punching and blanking work, Niagara Straight Side Eccentric Geared Presses are readily outfitted with the most advanced automation controls and devices. Net result: Streamlined production, greater safety and simplified operation.

Take a look at the modern, enclosed construction of this rugged Niagara Two-Point Eccentric Geared Press. See how today's most advanced automation controls and devices are furnished as integral, built-in components of the press itself . . . *with piping and wiring fully concealed.* Note, too, how the driving assembly is neatly housed within the crown. Nothing has been overlooked in making this press an outstanding engineering triumph.

Niagara's eccentric drive delivers greater torque with less deflection. Rigid, all-steel, four-piece, tie rod frame provides utmost accuracy and prolonged die life. Niagara's low inertia, pneumatic friction clutch runs cooler and outlives others, for most of its weight continues to rotate with the flywheel to reduce heat and wear.

MAKE SURE THAT YOU HAVE ALL OF THE FACTS on Niagara Straight Side Eccentric Geared Presses . . . the one point, two point and four point designs in capacities from 100 - 1000 tons . . . and how they can be equipped for automation. Write for illustrated Bulletin 66 today.



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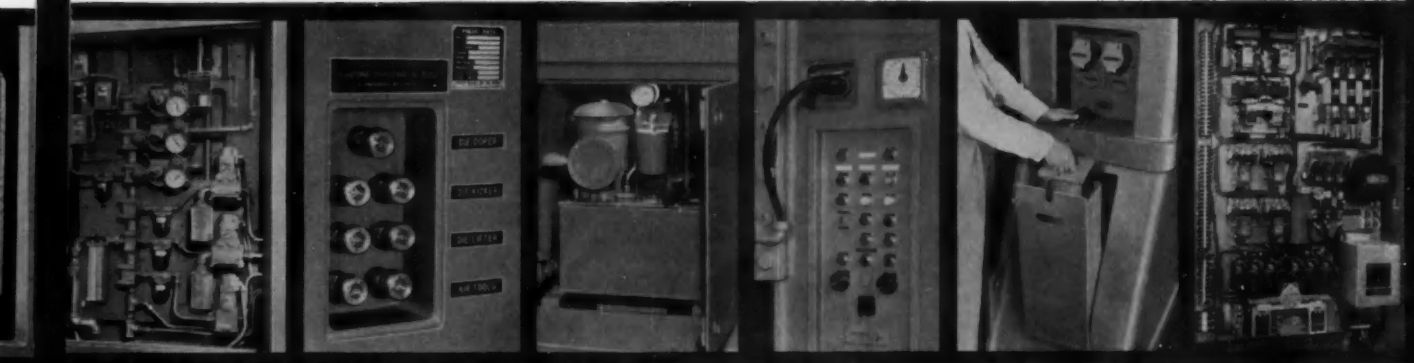


AIR CONTROL PANEL (Above left) conceals and protects air line pressure switches, lubricators, filters, gauges and valves behind dust-tight doors within one of the uprights.

CONTROLLED AIR SUPPLY RECEPTACLES (Above right) are provided for die doper, die kicker and die lifter, all synchronized with press cycle. Auxiliary receptacles are for die maintenance tools.

AUTOMATIC CIRCULATING OIL SYSTEM (Above left) sends metered flow of clean, filtered oil to all bearings and gears in the crown, as well as to slide gibs. Correct operating oil pressure is maintained or press stops automatically.

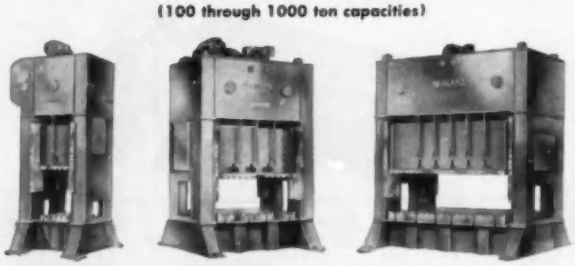
OPERATOR'S PANEL (Above right) features de-luxe operating controls conveniently arranged for fingertip direction of every press motion. Note receptacle for "RUN" push button station and Selsyn stroke position indicator.

AUX. POWER SUPPLY & SAFETY BLOCK. (Above left) Two 110 V. and two 440 V. receptacles for automation equipment, conveyors, tools, etc. Safety block (stored in bin) is chained to safety plug which de-energizes press control when pulled from receptacle.

COMB. MOTOR & PRESS CONTROL (Above right) in oil and dust-tight enclosure flush mounted in frame.

ONE-POINT, TWO-POINT AND FOUR-POINT SUSPENSION

(100 through 1000 ton capacities)



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America's most complete line of presses, press brakes, shears, other machines and tools for plate and sheet metal work.

The drafting stage—not later—is the time to design-in oil seals!

Oil seals are precision products. They are designed to operate under a specific set of conditions. Change just one of those conditions—lubricant, shaft speed, temperature, even bearing position—and a different seal will almost always be needed.

Why chance costly retooling or remanufacture? Specify the correct seal on the drawing-board. And when you do, get all the information there is on new seals, new lip compounds, and mechanical designs. Get it from your National Oil Seal Engineer. His counsel is complete, up-to-the-minute, and accurate. You couldn't buy better oil seal information, yet his help is yours for the asking.

Why "do it yourself?" Call the nearest National Oil Seal Engineer now.

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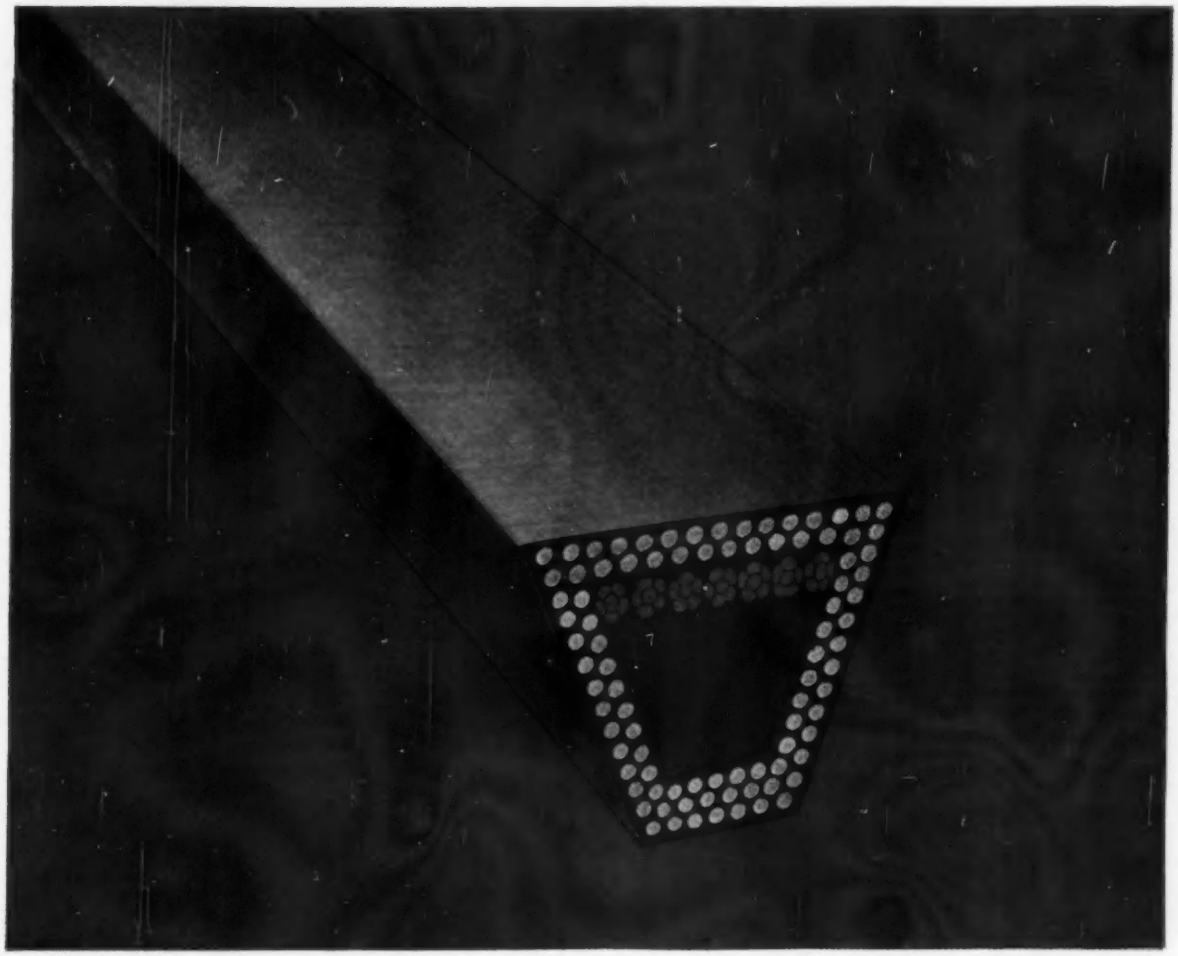
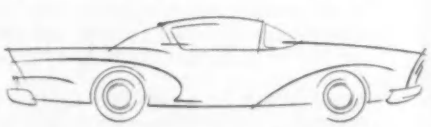
US RUBBER AUTOMOTIVE V-BELTS



Quiet . . . smooth . . . vibration at the vanishing point



Unerring electronic controls; new methods of curing; the facilities of the largest and most modern plant devoted exclusively to the manufacture of endless transmission belts—these are the factors that bring to the automotive industry the one V-belt that erases vibration to the vanishing point.

The U. S. V-Belt contributes greatly to the silent and efficient operation of fan, generator, water pump, power steering and air conditioning . . . all part and parcel of today's finest automobiles.

Contact Automotive Sales, Mechanical Goods Division, New Center Building, Detroit 2, Michigan. Phone: TRinity 4-3500.

US RUBBER **Mechanical Goods Division**

United States Rubber

A Boeing B-47 Stratojet medium bomber gets a take-off assist from 30 Phillips Petroleum Company M15 JATOs.

N-A-X HIGH-TENSILE is readily formed and welded. Here, before welding, a worker sizes the container's aft head, drawn by a 250-ton press. Bottom forging is locked in.

N-A-X HIGH-TENSILE STEEL FORMS AND WELDS READILY

Formability: Even at the higher strength levels (50% greater than mild carbon steel) this material can be cold formed and drawn into very difficult stampings and cold formed shapes.

Weldability: Its weldability by any process is excellent, maintaining toughness through a wide range of temperatures. Under-bead cracking tests are excellent. Using American Welding Society standard bead-weld testing, shows under-bead hardness rises only to 95 Rockwell from 80-85 Rockwell prior to welding.

Make *your* product better, too—
with this high-strength steel

How N-A-X® HIGH-TENSILE STEEL

supplied the money-saving answer to a critical take-off problem

JATO rockets boost heavily laden planes into the air faster, let them operate from shorter runways. A new JATO developed by Phillips Petroleum Company required a case that would endure a pressure of 1,000 pounds per square inch at the high blast temperatures. Yet it must be lightweight, easily fabricated, economical.

In 1954, 100 JATO cases of N-A-X HIGH-TENSILE steel were tested at Air Force Plant 66 near McGregor, Texas, where Phillips Petroleum is contractor-operator.

Result: The N-A-X HIGH-TENSILE case passed every test with flying colors. It *surpassed* the required standards for strength by as much as 20 percent.

The high-strength characteristics that make N-A-X HIGH-TENSILE a better steel for JATO fuel containers also make it better for many other types of pressure containers, where high strength and lighter weight are equally important. It is particularly suitable for Propane cylinders and pressure vessels for the chemical, automotive and oil industries, that must withstand severe interior pressures and handling abuses . . . and for such products as truck and trailer frames, wheels and bumpers, railroad and earth-moving equipment, shipping containers, pipe, and many others.

Other Important Advantages: N-A-X HIGH-TENSILE STEEL, compared with carbon steel, is 50% stronger • has high fatigue life with great toughness • is more stable against aging • is more resistant to atmospheric corrosion. It polishes to a high luster at minimum cost • has greater resistance to abrasion or wear • offers greater paint adhesion.

With N-A-X HIGH-TENSILE you can design longer life, strength with lightness, and economy into your products. Let us show you how.

COMPANION HIGH-STRENGTH STEEL IN THE N-A-X FAMILY

N-A-X FINEGRAIN. A low-alloy high-strength steel ideally suited for applications where the enhanced resistance to atmospheric corrosion of N-A-X HIGH-TENSILE is not required.

N-A-X HIGH-TENSILE STEEL

N-A-X Alloy Division
GREAT LAKES STEEL CORPORATION
Detroit 29, Michigan — Division of
NATIONAL STEEL CORPORATION

N-A-X Alloy Div., Dept. J-1,
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☐ Please send me 8-page illustrated technical catalog on N-A-X HIGH-TENSILE Steel.

☐ Please have your representative contact me.

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Worm turns for faster finish

REMOVING fine feather burrs and blending surface junctures on steel worms is an exacting operation. Hand methods are slow and costly . . . quality irregular.

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Results that can be obtained by Osborn Power Brushing methods are virtually unlimited. Without obligation, an **O**sborn **B**rushing **A**nalyst will survey your manufacturing needs. Write *The Osborn Manufacturing Company, Dept. E-50, 5401 Hamilton Avenue, Cleveland 14, Ohio.*

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Automobile trim of

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You can't tell the age of a car by its stainless steel! After a thousand or *two hundred thousand miles* of driving, Superior Stainless gleams good as new. ● Enjoy the beauty of stainless on the cars *you* buy —costs you nothing in care, gives you everything in pride and pleasure!

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CORPORATION
CARNEGIE, PENNSYLVANIA

Stop costly maintenance and replacement...use

HOUDAILLE
ROTARY SHOCK ABSORBERS

Engineered and built to outlast and outperform linear shock absorbers

SIMPLE ARITHMETIC proves that the higher *initial* cost of Houdaille's famous Rotary Shock Absorbers is more than offset by continued savings in repair and replacement. Thousands of Houdaille-built shock absorbers on railway passenger cars, motor trucks, buses, tractors and farm equipment, and other heavy-duty vehicles have seen long years of rugged service...with little or no maintenance. Yet when necessary, Houdaille Rotary Shock Absorbers are easy to service—*without being removed.*

Another advantage: an *external* valve adjustment permits the vehicle operator to compensate for any road conditions . . . and for summer or winter operation.

Houdaille Rotary Shock Absorbers are available in a wide range of designs, both for original equipment and replacement use. Or they can be custom-engineered to fit your particular equipment and your operating conditions. Next time you need shock absorbers ...specify HOUDAILLE.

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Another outstanding Houdaille development, for use on marine, automotive and railway diesel engine crankshafts. The completely sealed unit is a true damper, not a detuner. Utilizing the shearing action of highly viscous fluid, it is effective across the full range of engine criticals. Permits manufacturers and users of diesel engines to obtain more efficient operation and higher horsepower. Custom-designed to meet the individual requirements of any engine.

EXPERIENCED ENGINEERS

and precision production facilities at Houdaille are at your service for any application involving hydraulics. Write Dept. AI for specification and performance data on Rotary Shock Absorbers or Torsional Vibration Dampers.

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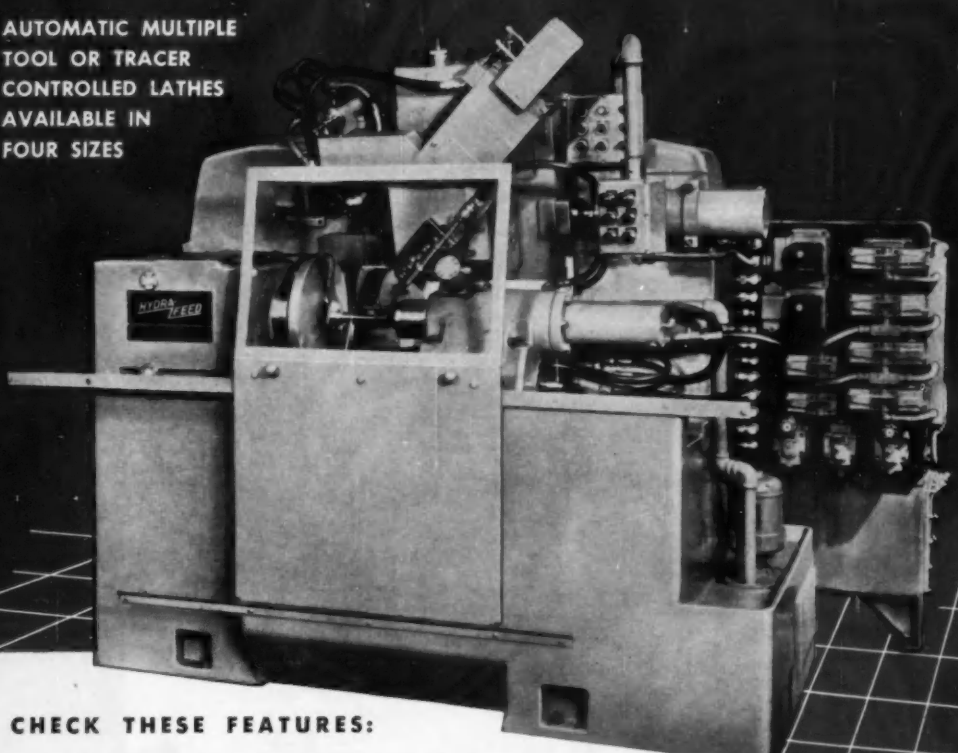

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Unobstructed-front design allows easier loading — quick tool change.

Massive strength and rigidity with extra power to take full advantage of maximum feeds and speeds.

Hydraulically operated slides may be set to automatically perform any combination or sequence of operations.

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ENABLES YOU TO TRANSFER POWER OVER, UNDER, AND AROUND OBSTACLES ECONOMICALLY AND EFFICIENTLY

Circle Ess Flexible Shafts offer economical construction and low maintenance costs for remote control applications. Many manufacturers reduced expenditures, and saved space by using flexible shafting to eliminate alignment problems and ALL gearing. For complete information about Circle Ess Flexible Shaft assemblies and our Adapters used with Flexible Shafts write to us on your letterhead.

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Single Wire, Burnished Cotton Braiding, Light Weight and Very Flexible.

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2 or 4 Wire, Synthetic Rubber Cover, Water Proof and Non-Abrasive.

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Combination Cable, Casing, and End Fittings For Specific Application.

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Combination Cable, Casing, and End Fittings Provides Higher Flexibility.

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This adapter provides three outlets, which enables the running of three units from the same power source. Ball bearing construction enables this adapter to handle heavy loads.

RIGHT ANGLE ADAPTER
To provide a connection for flexible shaft control where space limitations do not permit a conjunction without bending the shaft into too small a radius.

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To drive more than one unit from the same power source and to provide two gear ratios from the same power source.

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To provide a connection for flexible shaft control where a bend sharp enough to damage the shaft is required. Ball bearing construction enables the handling of heavier loads.

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Combination Cable, Casing, and Flat End Fittings For Specific Application.

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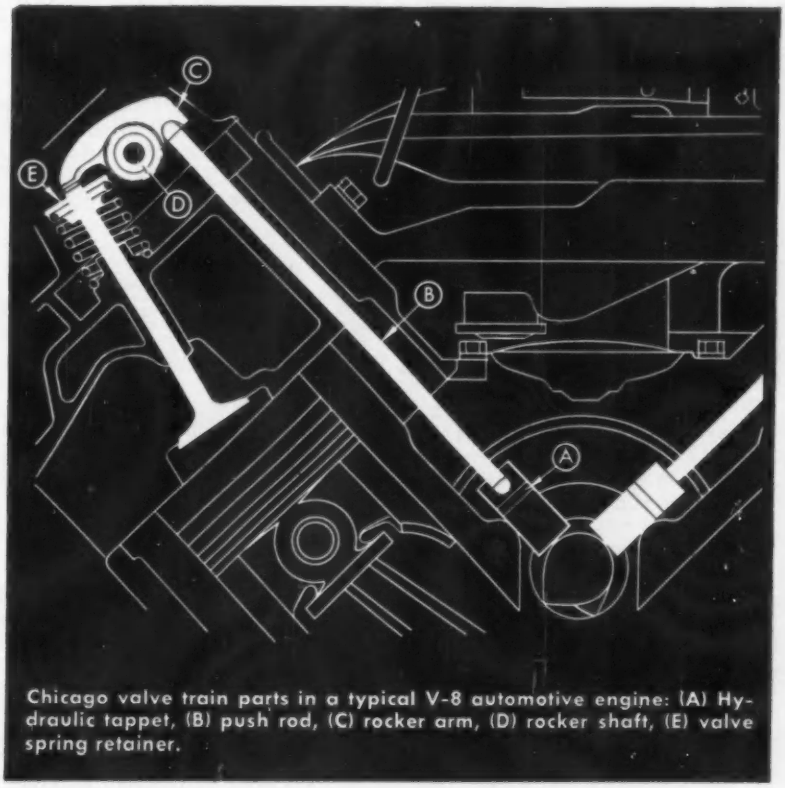


Chicago valve train parts in a typical V-8 automotive engine: (A) Hydraulic tappet, (B) push rod, (C) rocker arm, (D) rocker shaft, (E) valve spring retainer.

When it comes to valve gear,

leading engine makers come to

CHICAGO

Here at Chicago you'll find a single source for everything you need in valve gear. These specialized facilities are solving problems and saving money for leading engine manufacturers . . . and can do the same for you.

Design and Engineering—at Chicago you'll find valve gear engineering experience in depth . . . men who understand your problems and will work with your engineering staff in designing cam shafts and complete valve gear assemblies for any type of engine.

Manufacturing—Chicago is a leading manufacturer of valve train parts. Our complete line includes precision-made hydraulic and mechanical tappets; push rods in both lightweight tubular and solid styles; valve adjusting screws including new self-locking screws that cut assembly costs; valve spring retainers; rocker arms and rocker shafts.

Testing—we have complete laboratory and engine testing facilities.

For the full story of how we can serve you, write our Tappet Division.

THE CHICAGO SCREW COMPANY

DIVISION OF STANDARD SCREW COMPANY • ESTABLISHED 1872

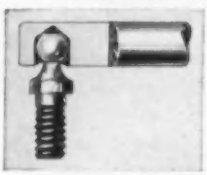
2801 WASHINGTON BOULEVARD, BELLWOOD, ILLINOIS

IMPROVED BALL JOINT DESIGNS

The five Tourek-designed Ball Joints illustrated below were developed for special applications and large volume production. Continued research by our engineers assures constantly improved Ball Joint designs. The superiority of TOUREK "STANDARD" Ball Joints results from the accumulated experience of more than 37 years of development and manufacturing.

TOUREK OVERTRAVEL BALL JOINTS

Tourek Overtravel Ball Joints are designed to suit your application. This is not a stocked item due to such variations as spring travel, overall length, and spring tension. The tapped hole may vary to allow adjustment. If you have an application that requires an Overtravel, our Engineering department will welcome the opportunity of working with you.

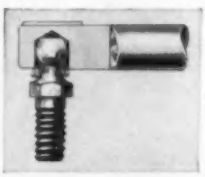


TOUREK TYPE "F" BALL JOINTS

Simplicity of Tourek Type "F" offers a very low cost Ball Joint which can be adapted to various rod or shell sizes. Recommended where side motion will not exceed 15 degrees in either direction. This assembly is supplied with hardened ball screw; shell wear surface may be hardened if so desired.

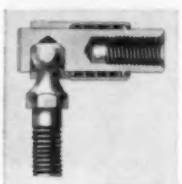
TOUREK TYPE "K" BALL JOINTS

Tourek Type "K" Ball Joints offer hardened wear surfaces, yet can be adapted to various rod or shell sizes. A very functional design at a minimum cost. Recommended for applications where side motion is restricted.



SNAP-ON BALL JOINT.. CLIP TYPE

Tourek "Snap-on" Ball Joints—Clip Type used in the automotive field for years, permit removal of ball screw for quick length adjustment; also for engagement of shell or rod on pre-assembled ball screw. This unit can be adapted to various rod lengths and shells; ball screw is supplied hardened with soft or hardened wear surface.



SNAP-ON BALL JOINT.. SLEEVE TYPE

A precision-made Ball Joint designed for a free assembly in those "hard-to-get-at places" or where adjustment of rod length must be made. A slight retraction of the outer shell exposes the socket for quick insertion or withdrawal of the ball. Releasing the spring loaded shell returns it to normal operating position.

No pressure is placed on the ball surface thereby permitting a free movement with maximum .004" end play. A minimum 15° movement in any direction obtained in standard design—for special application side motion may be restricted.

Snap-on Ball Joints—Sleeve Type—can be supplied to accommodate thread range from #10 to 3/4". Ball and socket wear surface can be supplied hardened.

Tourek
BALL JOINTS
The Recognized "STANDARD"

J. J. TOUREK MFG. CO.

1901 SOUTH KILBOURN AVENUE, CHICAGO 23, ILLINOIS

World's largest manufacturer of "STANDARD" Ball Joints. Also makers of Pipe Plugs and quality Screw Machine Products. Range: up to 2⅝" diameter single and multiple spindle machines. Operations include: Threading • Tapping • Milling • Drilling • Grinding • Polishing • Plating • Heat Treating • Silver Soldering.

ESTABLISHED 1920

flattening a wrinkle or blasting an invader . . .

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MAINTAIN A PERFECT OIL SEAL

under high heat and pressure . . .

The workaday steam iron and the guided operational missile have a common need: Both require seals which withstand *extremes in temperature and pressure.*

In these and many more applications beyond the ordinary thermal range, LINEAR SILICONE "O" RINGS provide the answer. The product of Linear pioneer research, these specially compounded "O" Rings retain flexibility at temperatures as low as —130° F. Yet they also maintain dimensional stability . . . resist compression set at temperatures as high as 500° F.!

Moreover, resistance to moisture, oxidation and mechanical shock make LINEAR SILICONE "O" RINGS an excellent choice in many other modern sealing problems. They are precision molded to your exact specifications. Get the full facts now!

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LINEAR, Inc., STATE ROAD & LEVICK ST., PHILA. 35, PA.

BLISS HIGH PRODUCTION PRESSES "do-it-themselves" at Black and Decker

Just three Bliss High Production Presses produce the millions of motor laminations Black and Decker uses in its complete line of more than 150 portable power tools!

Running in the upper speed range, sometimes at well above 250 strokes per minute, through two shifts a day—and occasionally three. And they've been doing it for a long time now with no problems.

Of course, H-P presses are built for speed. Extra heavy cast Meehanite frame • *Square* gibbing • Automatic lubrication • Variable speed drive • Special air friction clutch • Counterbalanced crankshaft. Every feature has been especially designed to maintain precision at top speeds. That adds up to top production rates, longer die life.

Another plus, users tell us, is the wide open die area that makes quick set-up and changeover possible. In fact, the fast set-up makes *short-run* work practical with Bliss H-P Presses. And the room *under* the press is a handy place to run chutes or store tote boxes.

If production of short-stroke stamped parts is your problem, long run or short, you'll want to learn more about Bliss H-P presses. Our recently revised 32-page catalog No. 27-C describes the entire line and gives examples of the wide range of work you can accomplish with these presses. Why not write for a copy today.

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U. S. Plants in Canton, Cleveland, Salem and Toledo, Ohio; Detroit and Hastings, Michigan; Midland and Pittsburgh, Pa.; San Jose, California; Branch Offices in Boston, Burbank, Chicago, Cleveland, Dayton, Detroit, Indianapolis, New Haven, New York, Philadelphia, Rochester, San Jose, Salem, Toledo, Washington, D. C.; and Toronto, Ontario, Canada; E. W. Bliss (England) Ltd., Derby; E. W. Bliss Co. (Paris), France. Other representatives throughout the world.

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ENGINEERS...

Let's exchange resumes

NAME:
Douglas Aircraft Company, Inc.

POSITION:
World's largest manufacturer of aircraft and missile systems.

LOCATIONS:
Santa Monica, El Segundo and Long Beach, California; Tulsa, Oklahoma; Charlotte, North Carolina.

AGE:
37 years in aircraft; 15 in missiles.

EDUCATION:
An engineering company managed by engineers — such as Donald W. Douglas, B.S., Aeronautical Engineering (M.I.T.); F.W. Conant, B.S., Civil Engineering (Cornell); and A. E. Raymond, B.S., Mechanical Engineering (Harvard), M.S., Aeronautical Engineering (M.I.T.), and Ph.D. (Hon.) (Polytechnic Institute of Brooklyn) — and with key staff positions held by graduate engineers, physicists and mathematicians, many with advanced degrees.

EXPERIENCE:
Holder of many "firsts," such as
— first airplane to carry a pay load equivalent to its own weight. (1920)
— first globe-circling airplane. (1924)

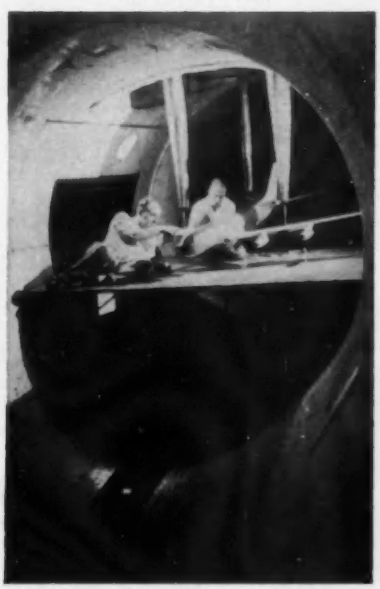
Builder of the famous "DC" series of commercial aircraft.
— every six seconds of each day, a Douglas commercial airplane takes off or lands somewhere in the world.
— currently producing the ocean-spanning DC-7C.
— soon to be in service, the exciting jet-powered DC-8.

Builders of nearly one-sixth of the planes produced in America during World War II.
Currently building even finer transports, jet fighters and bombers.
Pioneer in missile research and production with nine separate projects.

REFERENCES:
Every major airline in the world.
Thousands of manufacturers of components for aircraft and missiles.
The U.S. Army, Navy and Air Force.
Some 80,000 Douglas employees throughout the country.

NIKE I, a radar-guided missile, intercepts bombers at supersonic speeds despite evasive action.

Engineers modify DC-8 configuration in wind tunnel tests for stability and control data.



NAME: _____

POSITION: _____

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ADDRESS: _____

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AGE: _____

EDUCATION: _____

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EXPERIENCE: _____

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DOUGLAS AIRCRAFT COMPANY
BOX C-620
SANTA MONICA, CALIFORNIA

GO FURTHER WITH DOUGLAS FIRST IN AVIATION

Now— HERCULES OFFERS...

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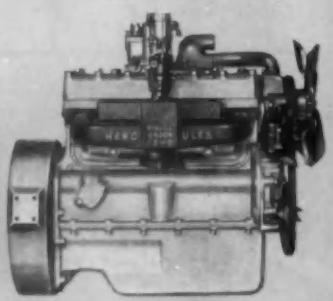
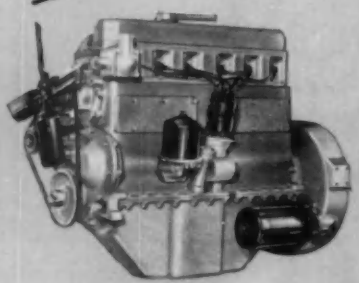
GASOLINE



L-HEAD

The famous Hercules L-head design is available in 36 models from 39 to 935 cu. in. displ. These compact engines have a reputation for long-life and dependable service.

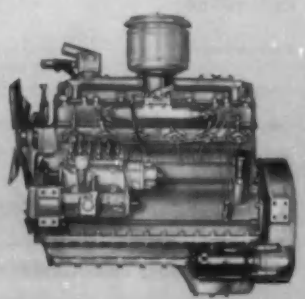
NEW



GO SERIES
Overhead Valve

These engines are available in 4 and 6 cylinder sizes from 173 to 339 cu. in. displ. The GO series is interchangeable with the new DD series, thus providing the option of gasoline or diesel power.

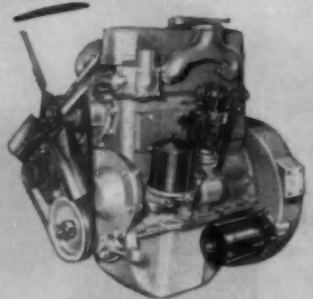
DIESEL



TURBULENCE CHAMBER

32 models of these high-speed heavy-duty diesel engines are available in 2, 4, 6 and 8 cylinder sizes from 83 to 1468 cu. in. displ. Many different versions are available.

NEW



DD SERIES
Direct Injection

In addition to having interchangeable mounting dimensions with the GO series, these engines have many interchangeable parts and accessories. For more details on any engine listed at right, contact the factory.

HERCULES MOTORS CORPORATION
Canton 2, Ohio

GASOLINE

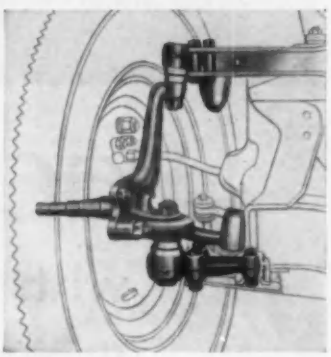
2 CYLINDER		
8XB	2⅞" x 3"	39
NXA	3" x 4"	56.5
NXB	3¼" x 4"	66.3
3 CYLINDER		
G. O. 130	3½" x 4½"	130
G. O. 149	3¾" x 4½"	149
G. O. 169	4" x 4½"	169
4 CYLINDER		
ZXA	2½" x 3"	59
ZXB	2⅝" x 3"	65
IXA	3" x 4"	113
IXB	3¼" x 4"	133
IXLB	3¼" x 4¼"	141
JX4E	3½" x 4¼"	164
G.O. 173	3½" x 4½"	173
JX4C	3¾" x 4¼"	188
G.O. 198	3¾" x 4½"	198
JX4D	4" x 4¼"	214
G.O. 226	4" x 4½"	226
6 CYLINDER		
QXA	3⅛" x 4⅛"	190
QXB	3¼" x 4⅛"	205
QXC	3⅜" x 4⅛"	221
QXD	3⅞" x 4⅛"	230
QXLD	3⅞" x 4¼"	236.7
JXE	3½" x 4¼"	245
JXB	3⅝" x 4¼"	263
G.O. 260	3¼" x 4½"	260
JXC	3¾" x 4¼"	282
G.O. 298	3¾" x 4½"	298
JXD	4" x 4¼"	320
G.O. 339	4" x 4½"	339
JXLD	4" x 4½"	339
WXC-3	4¼" x 4½"	383
WXLC	4" x 4¾"	358
WXLC-3	4¼" x 4¾"	404
TDXB	4⅜" x 5¼"	474
TDXC	4½" x 5¼"	501
RXB	4½" x 5¼"	501
RXC	4⅝" x 5¼"	529
RXLC	4⅝" x 5¼"	529
RXLD	4¾" x 5¼"	558
RXLDH	4¾" x 5¼"	558
HXB	5" x 6"	707
HXC	5¼" x 6"	779
HXD	5½" x 6"	855
HXE	5¾" x 6"	935
‡HXE	5¾" x 6"	935

‡Dual Carburetion

DIESEL

2 CYLINDER		
DIX-83	3⅝"x4"	83
DIXC	4"x4½"	113.1
DIXD	4¼"x4½"	127.5
3 CYLINDER		
D. D. 130	3½"x4½"	130
D. D. 149	3¾"x4½"	149
D. D. 169	4"x4½"	169
4 CYLINDER		
DIX4B	3¼"x4"	133
DIX4D	3⅝"x4"	166
D.D. 173	3½"x4½"	173
DOOB	3¾"x4½"	198.8
D.D. 198	3¾"x4½"	198
DOOC	4"x4½"	226.2
D.D. 226	4"x4½"	226
DOOD	4¼"x4½"	255
6 CYLINDER		
DIX6D	3⅝"x4"	248
DIX6-272	3 11/16"x4¼"	272
DJXB	3½"x4½"	260
D.D. 260	3½"x4½"	260
DJXC	3¾"x4½"	298
D.D. 298	3¾"x4½"	298
DJXH	3¾"x4½"	298
D.D. 339	4"x4½"	339
DJXHF	3¾"x4½"	298
DWXC	4"x4¾"	358
DWXD	4¼"x4¾"	404
DWXLD	4¼"x5"	426
DWXLDF	4¼"x5"	426
DRXB	4⅜"x5¼"	474
TCD-501	4½"x5¼"	501
DRXC	4⅝"x5¼"	529
DFXB	5"x6"	707
DFXC	5¼"x6"	779
DFXD	5½"x6"	855
DFXE	5⅝"x6"	895
TCD-895	5⅝"x6"	895
DFXH	5¾"x6"	935
DFXHF	5¾"x6"	935
8 CYLINDER		
DNX-V8D	6¼"x6"	1468
TCD-1468	6¼"x6"	1468

Thompson ball joints permit both right and left steering and up-and-down motion of the wheels on ball or spherical bearing surfaces. This advanced front suspension principle not only makes steering safer and easier, it also allows valuable extra space for larger engines; for more functional chassis design for future trends in styling.



Ten cars now feature front suspension ball joints on their sparkling new 1957 models. This advanced Thompson Products engineering improvement helps cars hug the road, makes steering easier and safer.

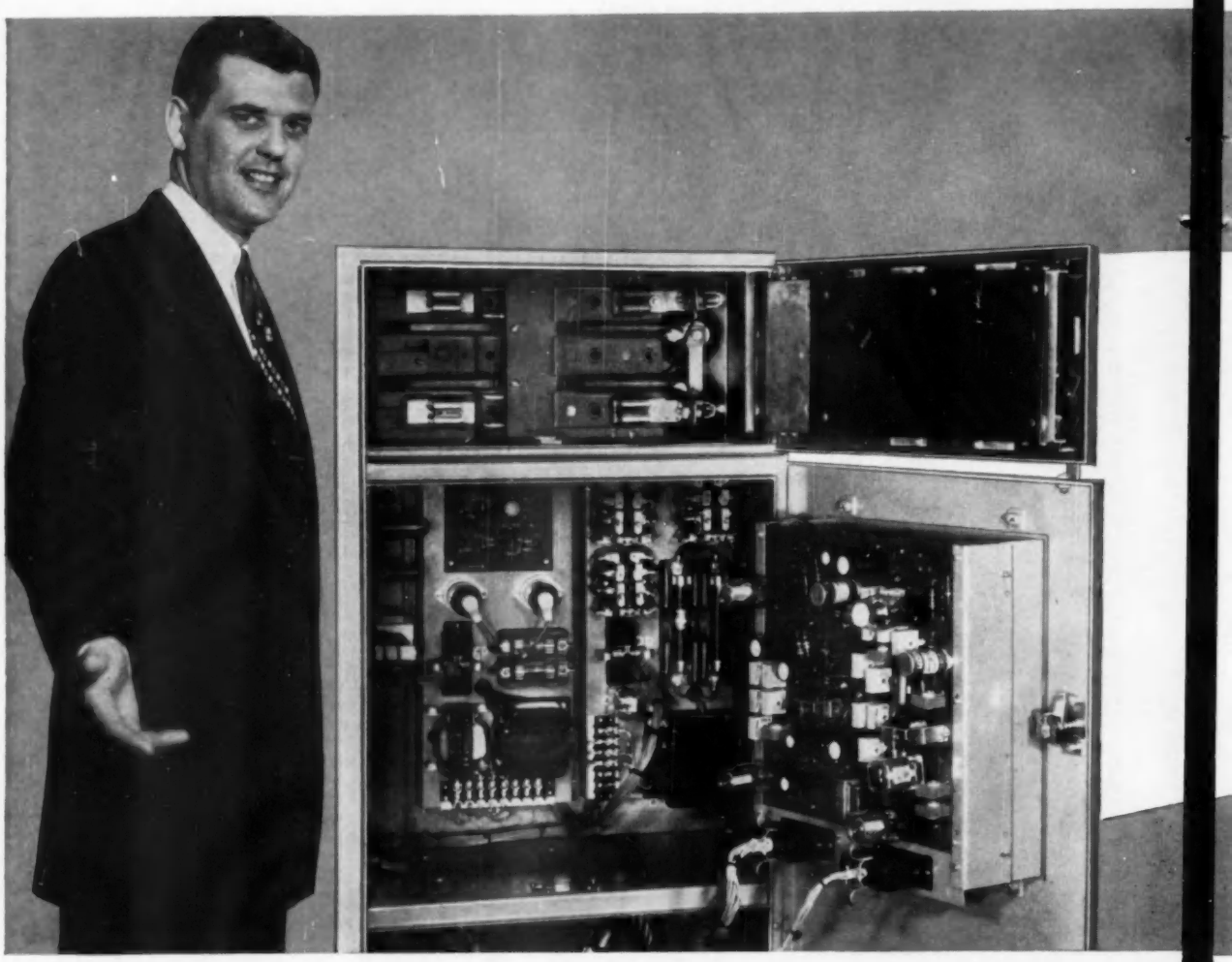
The development and mass production of this revolutionary new product is a typical example of Thompson's side-by-side cooperation with our customers. For more than 50 years Thompson has been a leading original equipment supplier to the American car, truck and farm implement industries.

Why not call on Thompson's engineers to help you with your steering and suspension problems. Write, wire or phone Thompson Products, Inc., Michigan Division, 34201 Van Dyke, Warren, Michigan.

You can count on

Thompson Products

Michigan Division:
Warren and Portland



600 WELDS PER

with the new WESTINGHOUSE

The Westinghouse Weld-O-Timer*— the automotive industry's most advanced resistance welding control—combines record-breaking performance with outstanding dependability. The excellent characteristics built into the Weld-O-Timer can mean the difference between continuous high production and profit-eating down time.

The New Weld-O-Timer Features . . .

Printed Circuits for absolute dependability, easy inspection, and minimum maintenance.

Lightweight, Plug-In Panels for faster servicing—all or any panels replaced in less than three minutes!

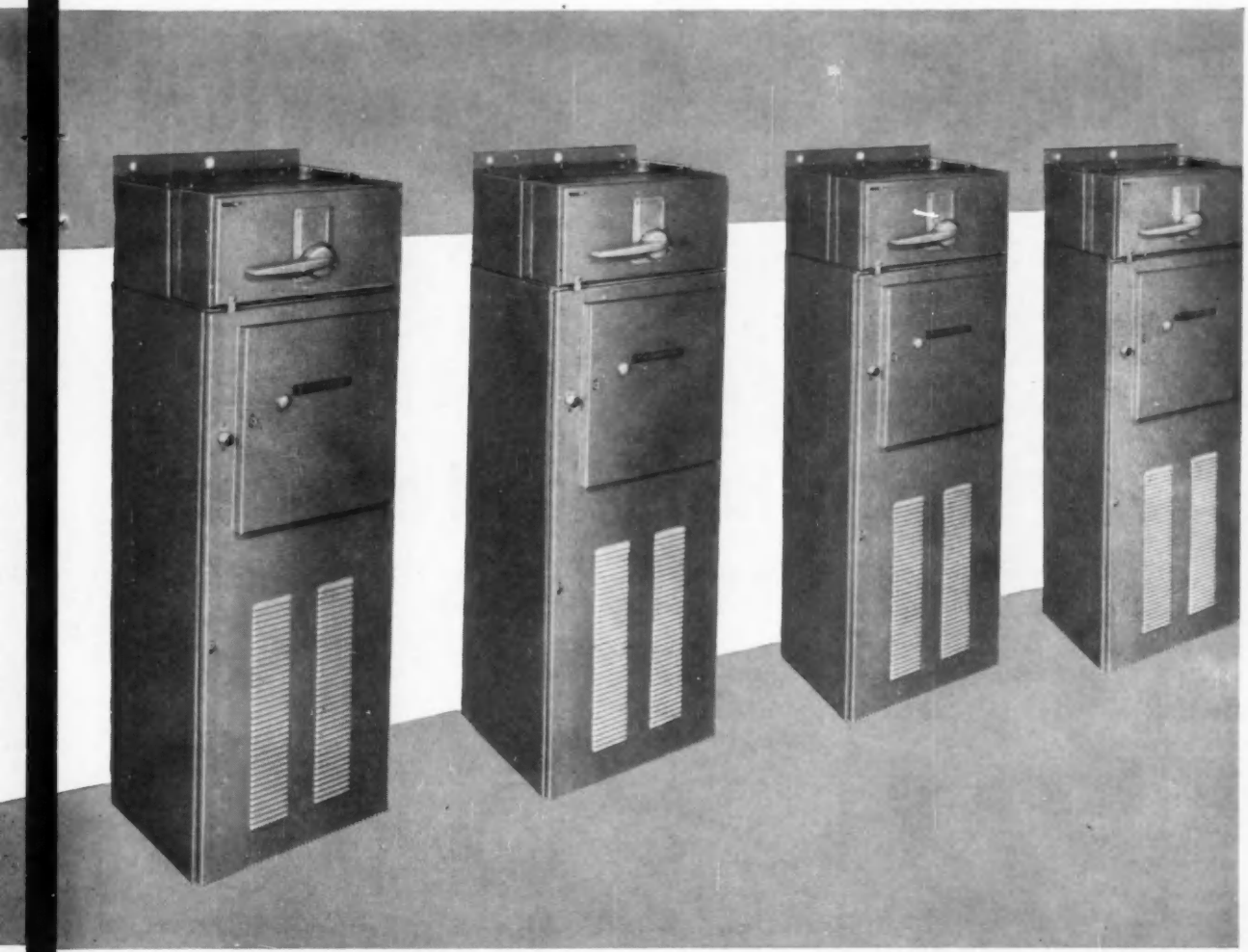
Weld-Safe Protection for foolproof protection of the machine, expensive dies and material.

Longer Life Components for 20% longer life of the control unit!

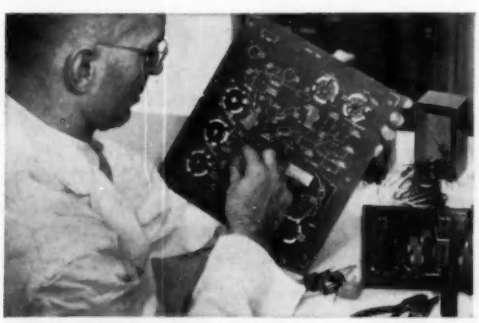
For more details on this outstanding automotive resistance welding control, call your local Westinghouse representative, today. Or write, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

*Trade-Mark
J-22007

YOU CAN BE SURE...IF IT'S Westinghouse



MINUTE POSSIBLE
WELD-O-TIMER



Printed Circuits . . . among the newest wiring techniques . . . have resulted in the elimination of 27 feet of interconnecting wire, and make the possibility of cold solder joints a thing of the past.

Plug-in panels
Dual gun and dual sequence
Initial squeeze delay
Negative hold time
Platen delay
Foot switch attachments
Air Valve connections
Fusible disconnect
Tube firing for Hypersil core transformers

These Special Features—incorporated in the automotive Weld-O-Timer, match high-speed production with minimum down time and maintenance. The Weld-O-Timer is also built to meet J. I. C. Specifications.

FRAM Easy Change Oil Filter

***New FRAM Easy Change Oil Filter Selected by these Top 1957 Automobiles**

Lincoln • Mercury • Thunderbird
Ford • Continental • Turnpike Cruiser
Packard • Studebaker Golden Hawk
Studebaker President

Now original equipment on 1957 cars*

(Patent Pending)

Developed by the world's finest filtration laboratories to fit the requirements of automotive engineers

New engine designs demand new filter designs. An outstanding example is the *new* FRAM Easy Change Oil Filter featuring:

• EASY TO ASSEMBLE—SERVICE: The new FRAM Easy Change Oil Filter is complete in one unit! No housing, no cover, no separate gasket, no oil lines! No connections or adjustments. No tools required. Screws into place as easily as a light bulb.

• BETTER PROTECTION: The FRAM Easy Change Oil Filter has a permanent, built-in gasket that insures a positive, leakproof seal and a built-in relief valve that insures adequate oil flow under all conditions.

• NEW PRODUCTS like this and the revolutionary FRAM Carburetor Air Filter are simply more proof that America's best known, most advanced filters will *always* be products of FRAM pioneering research.

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FILTERS

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The FRAM Institute of Advanced Filter Research in Dexter, Michigan, is at your disposal. Why not call or write today for the latest information in the industry on your problem?

Fram Corporation, Providence 16, R. I.
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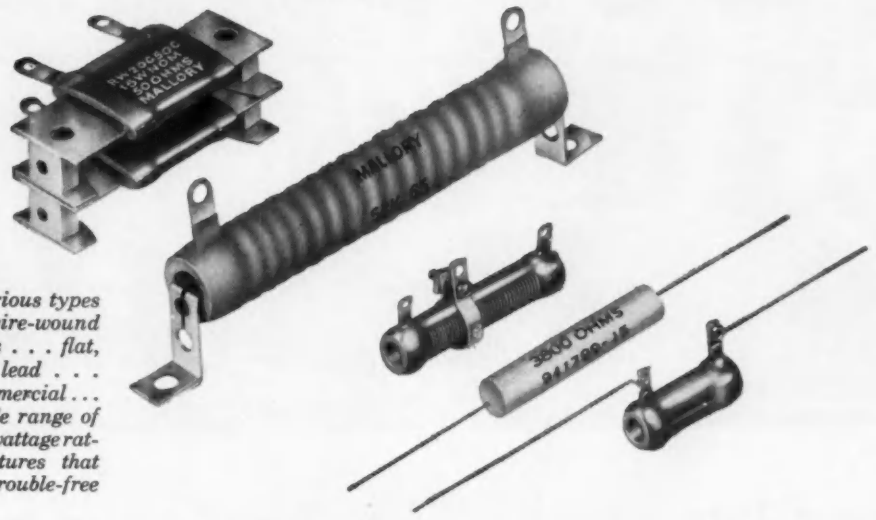
MALLORY



Each of the various types of Mallory wire-wound power resistors . . . flat, tubular, axial lead . . . military or commercial . . . comes in a wide range of resistance and wattage ratings, with features that assure long, trouble-free service.

Mallory Power Resistors

with the Performance and Ratings You Need

Need wire-wound power resistors? Look to Mallory for performance to meet your specifications . . . types and ratings to match your circuits. A wide line gives you extensive selection.

RW Military Types to meet the requirements of MIL-R-26B, characteristics G and V, include classifications RW20 through RW24, RW29 through RW39 and RW49. Each is available in a broad range of resistances and wattages.

Commercial Vitreous Enamel Tubular Resistors cover wattage ratings from 3 to 200 watts.

Axial Lead Resistors, 4 and 7 watt sizes, are especially designed for economical use in television and other commercial electronic applications.

Adjustable Vitreous Enamel Resistors, in ratings up to 200 watts, feature a special construction to hold the element securely in place to prevent shorting between turns.

Cement Coated Resistors, designed for use where resistance to extreme humidity is not needed, offer good service at economical cost. 5 to 200 watts, in many resistance values.

Mallory resistors incorporate many design features to assure superior life, high physical strength and ability to stand thermal shock. The vitreous enamel coating is a special, non-alkaline material, sealing the wire element in a uniform coating that prevents entry of moisture and electrolytic corrosion.

A consultation with a Mallory resistor specialist can help you select the types best suited to your specific circuit requirements. For data, write to Mallory for Catalog 79-8.

Expect more . . . get more from

P. R. MALLORY & CO. Inc.

MALLORY

P. R. MALLORY & CO., Inc., INDIANAPOLIS 6, INDIANA

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Electromechanical—Resistors • Switches • Tuning Devices • Vibrators
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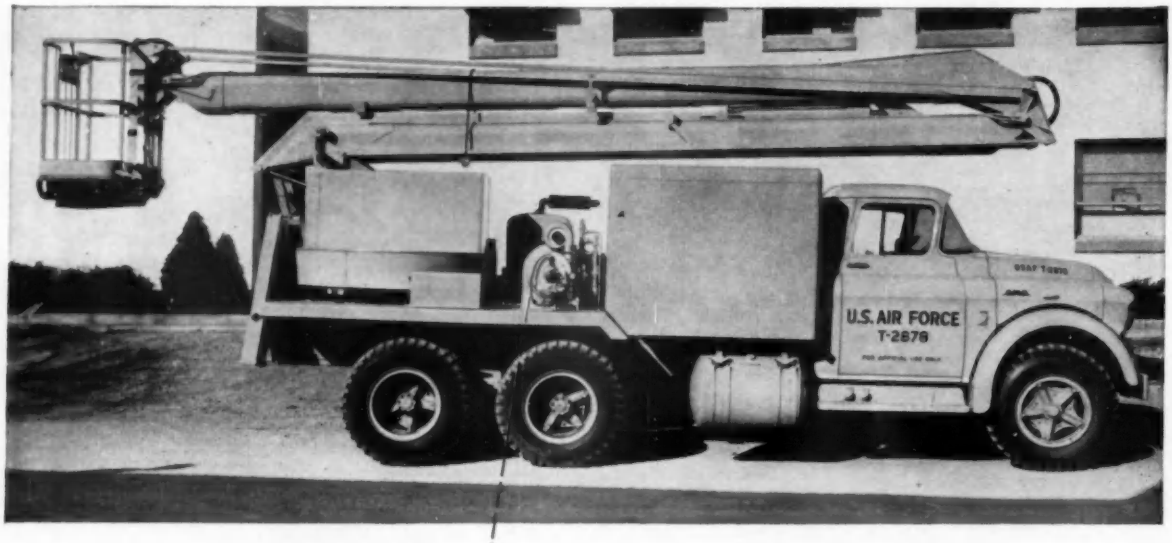
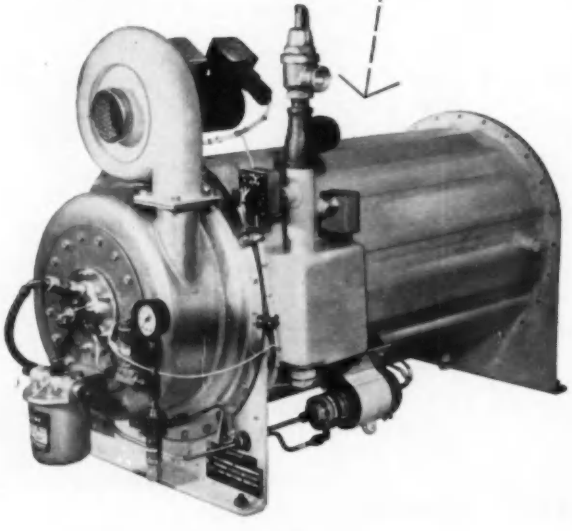
Parts distributors in all major cities stock Mallory standard components for your convenience.



new Pitman ice-removal unit heated by Janitrol



When ice and snow cover ramp-parked aircraft, this new MB-3 Ice Removal vehicle strips away thick ice fast.

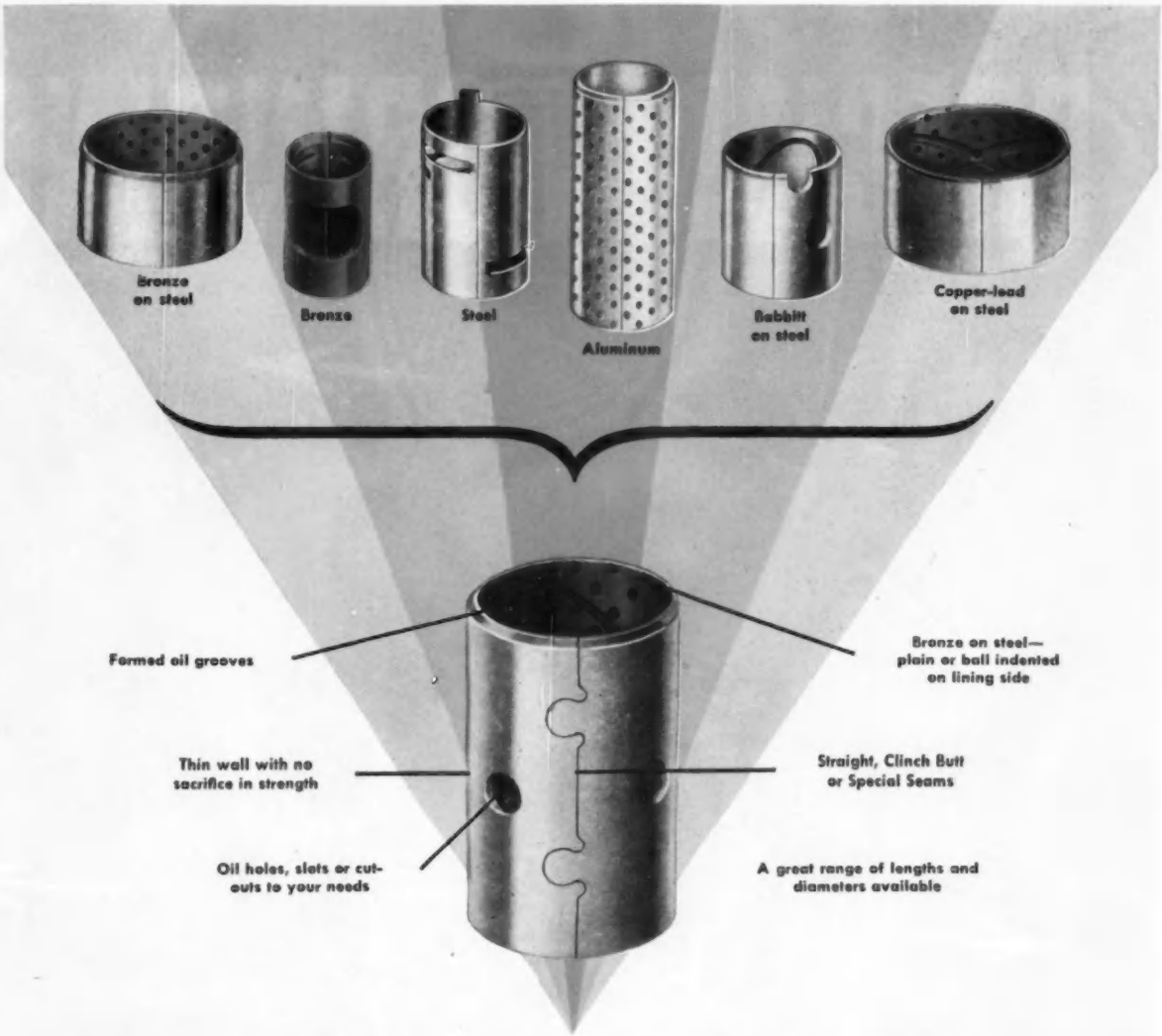
Operator on the extended boom can direct a spray of hot liquid against even the highest empennage. And for heating, the Pitman Manufacturing Company specified a Janitrol liquid heater, designed for a 10 gpm flow; 100° F temperature rise; 500,000 Btu/hr output.

The deicing fluid is automatically maintained at correct heat in a range from 180° to 200° F. Liquid recirculates continuously while the vehicle is in use, and discharge is through the heater at a maximum rate of 10 gpm when the sprays are turned on.

The Janitrol liquid heaters are available in a range of sizes from 90,000 Btu/hr to 750,000 Btu/hr . . . If you make ground handling equipment, vehicles for transport, crash trucks or fire engines—investigate Janitrol's line of liquid heaters for cargo or space heating. Janitrol heaters are in use right now from Thule to Byrd Station.

Janitrol

AIRCRAFT-AUTOMOTIVE DIVISION, SURFACE COMBUSTION CORPORATION, COLUMBUS 16, OHIO
DISTRICT ENGINEERING OFFICES: WASHINGTON, D.C., PHILADELPHIA, COLUMBUS, FT. WORTH, HOLLYWOOD


Bronze on steel
Bronze
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Aluminum
Babbitt on steel
Copper-lead on steel
Formed oil grooves
Thin wall with no sacrifice in strength
Oil holes, slots or cut-outs to your needs
Bronze on steel—plain or ball indented on lining side
Straight, Clinch Butt or Special Seams
A great range of lengths and diameters available

Bearing Performance with Bushing Economy

Any of these design features can be incorporated in our plain or bi-metal bushings. For many applications lower cost bushings provide the needed bearing characteristics at a distinct price advantage. We provide a complete engineering service. Address:

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DIVISION, Federal-Mogul-Bower Bearings, Inc.
11037 Shoemaker, Detroit 13, Michigan

BABBITT-LINED BEARINGS

BEARING-SURFACED THRUST WASHERS

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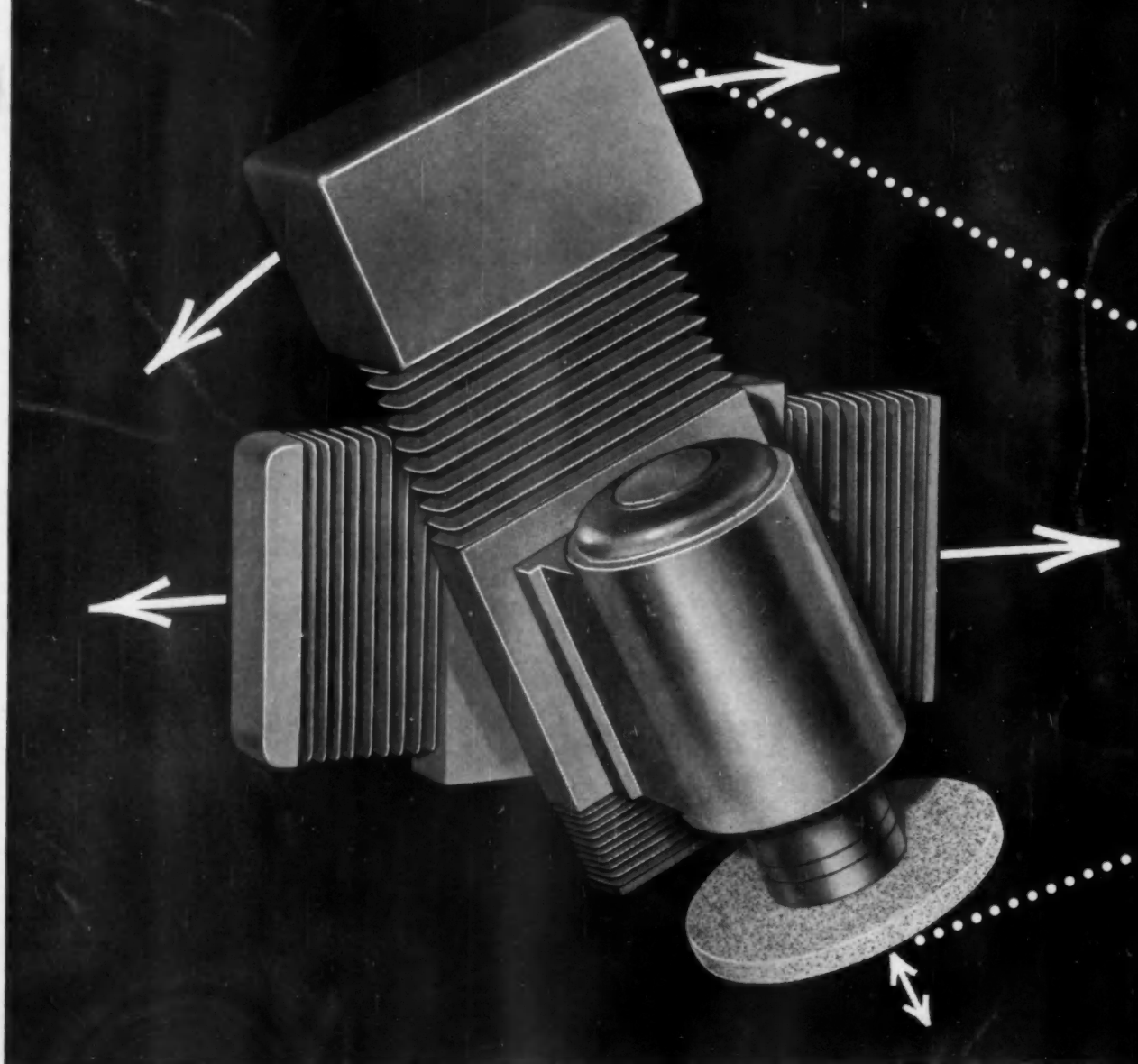
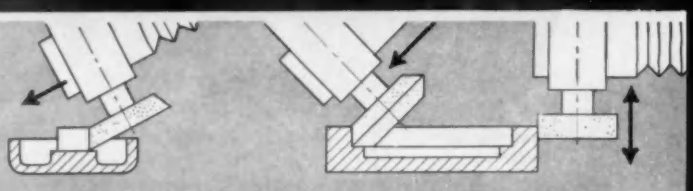
PRECISION GRINDING



Diagrams show typical applications of Frauenthal Standard Slide Units to a variety of grinding problems.



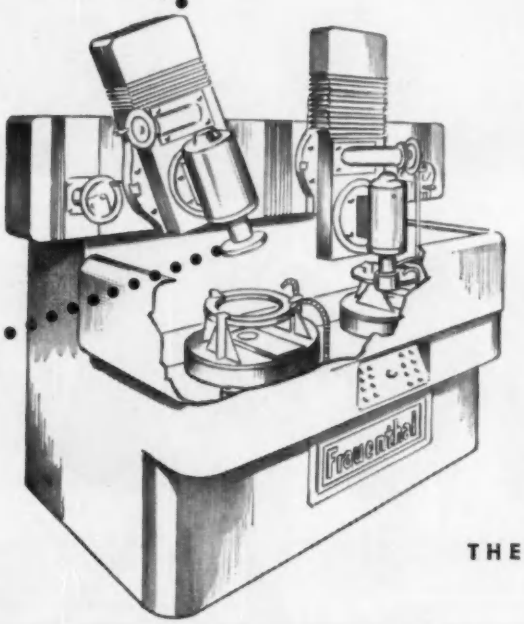
at any angle!

Frauenthal's creative engineering Now makes available Standard Slide Units in any number of combinations for production grinding applications . . .

IT IS NO LONGER NECESSARY to absorb special engineering and design costs when Frauenthal Standard Slide Units — plus a variety of grinding spindles — can be assembled to machine bases appropriate to a particular job. And these standard slides in single or multiple units can be arranged in an infinite number of spindle positions to accommodate an endless variety of simultaneous or sequenced, automatically controlled grinding operations.

What's more, you get all the advantages of Frauenthal's advanced engineering and design experience—proven on single and multiple-head grinders used on special production jobs. For example: parts for jet engines, diesel and automobile engines, tanks, gun mounts, radar units, large and small diameter precision bearings and machine tool components.

As illustrated here, this model of the versatile grinding compound shows how the Frauenthal Standard Slide Unit can be adapted to approach the work from any desired angle.

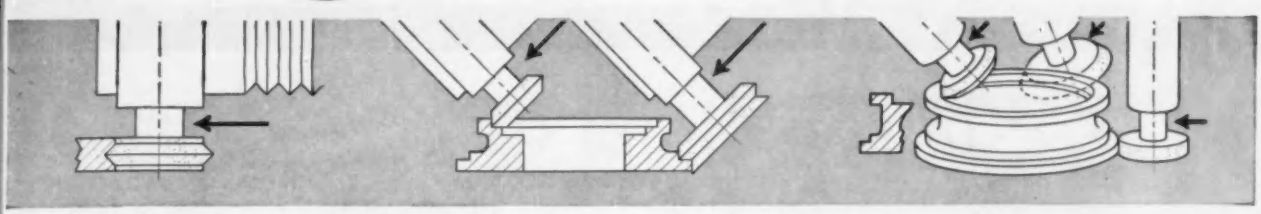


Here's a typical Frauenthal Double Head Vertical Spindle application utilizing two of the Frauenthal Standard Slide Units shown on the opposite page. Although applied to a particular grinding situation, these slide units retain versatility for angular positioning. Frequently, as indicated in panels 2 and 4 at the bottom of the page, diameters and adjacent surfaces are ground at one time with a single wheel dressed to the proper contour.

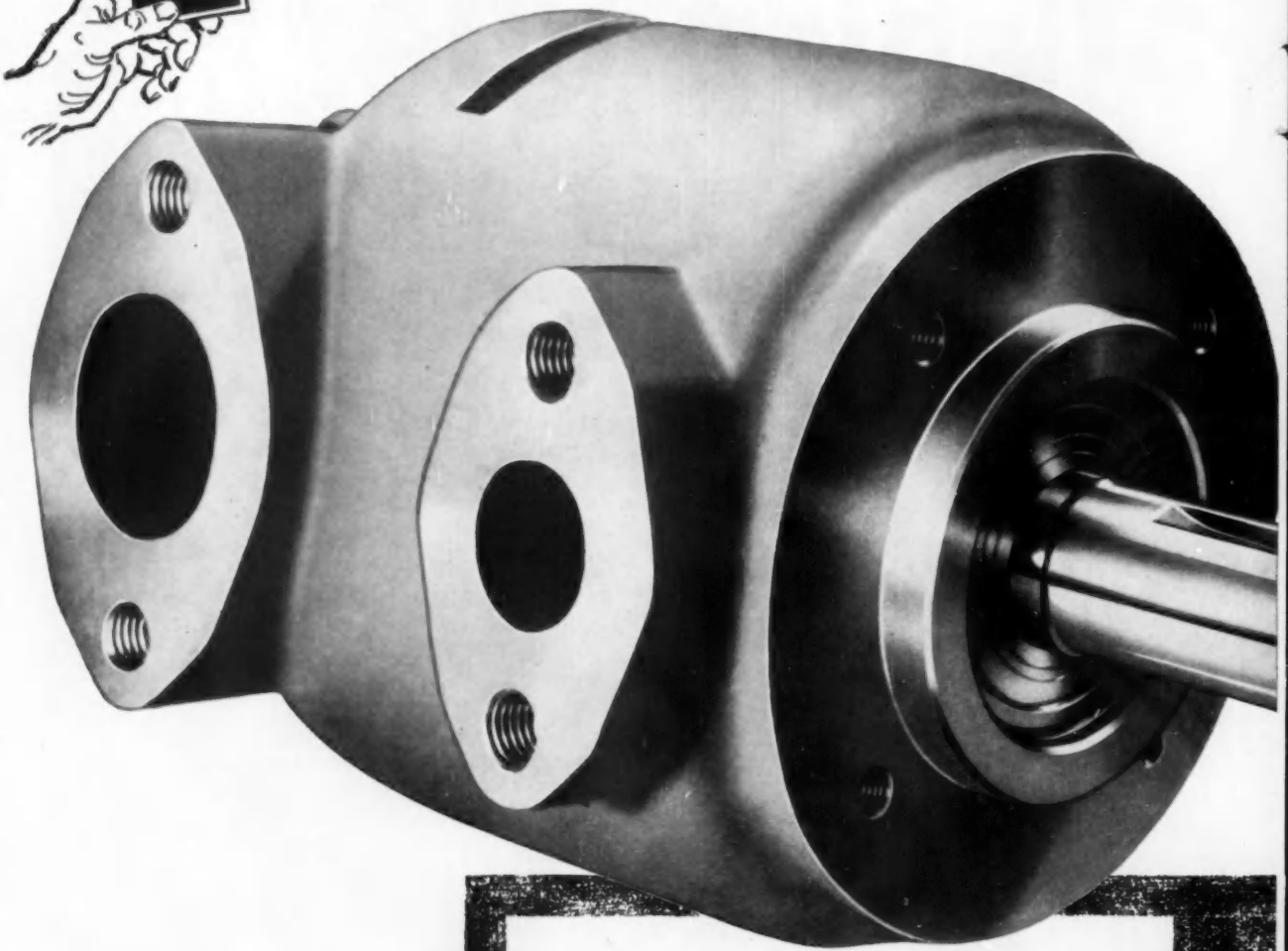
Send a print of your "problem grinding part" and our engineers will show you how to apply Frauenthal Standard Slide Units to solve the problem. Include in your letter pertinent production information — number of pieces, etc. Be sure to investigate the latest Frauenthal Vertical Grinders with Standard Slide Units. For complete details, contact Frauenthal of Muskegon.

Frauenthal Division
THE KAYDON ENGINEERING CORP.
MUSKEGON, MICHIGAN, U. S. A.

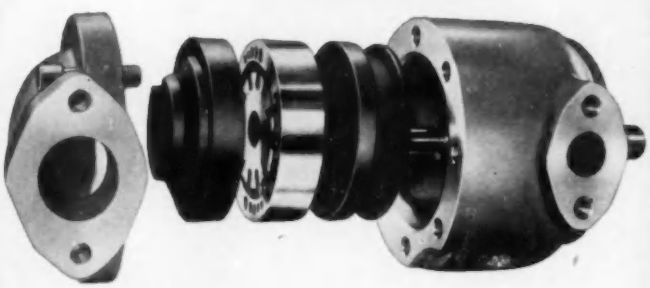
F-256



NEW FROM DENISON



For mobile equipment
For special machinery
For automation



Denison's exclusive cartridge construction. *Side plates hydraulically loaded to maintain uniform pressure on rotor regardless of delivery pressure.*

Continuous 2000 psi service in a versatile vane-type hydraulic pump

FOR MOBILE EQUIPMENT, less weight, increased payload

FOR SPECIAL MACHINERY, more power in less space

FOR AUTOMATION, heavy-duty design for low maintenance

● Here are the important features you can engineer into your designs with Denison's new "T" Series balanced vane hydraulic pump.

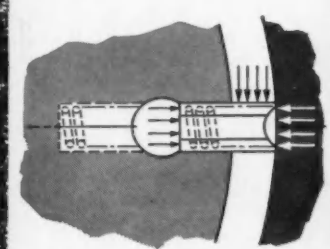
Long, efficient life because Denison's fully-balanced vanes and rotors reduce wear on cam rings and thrust plates to give long pump life with minimum maintenance.

Packs More Power in Less Space. Internal friction is lower, volumetric efficiency is higher. Actually packs 50 h. p. in less space than a conventional 3 h. p. electric motor where space and weight are a premium.

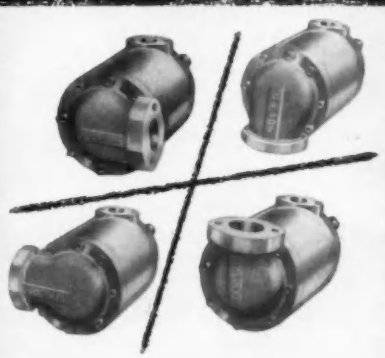
Cold-Weather Starting, under severe weather conditions, to maintain construction schedules.

Fast, Easy On-the-Job Service because the complete pumping cartridge can be removed and replaced as a unit without special tools or skills.

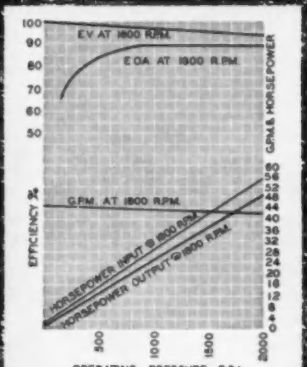
Write for complete engineering specifications in Bulletin 200. Denison Engineering Division, American Brake Shoe Co., 1212 Dublin Road, Columbus 16, Ohio.



***Hydraulically balanced vane construction** cuts excessive wear on vane and cam ring . . . for longer life, higher volumetric efficiency.*



***Universal Mountings** . . . may be mounted in any of four different positions—face, flange or bracket mounted. Operates clockwise or counter-clockwise.*



Performance curve of "T Series" vane-type pump illustrates high volumetric efficiency.

HYDRAULIC PRESSES • PUMPS • MOTORS • CONTROLS

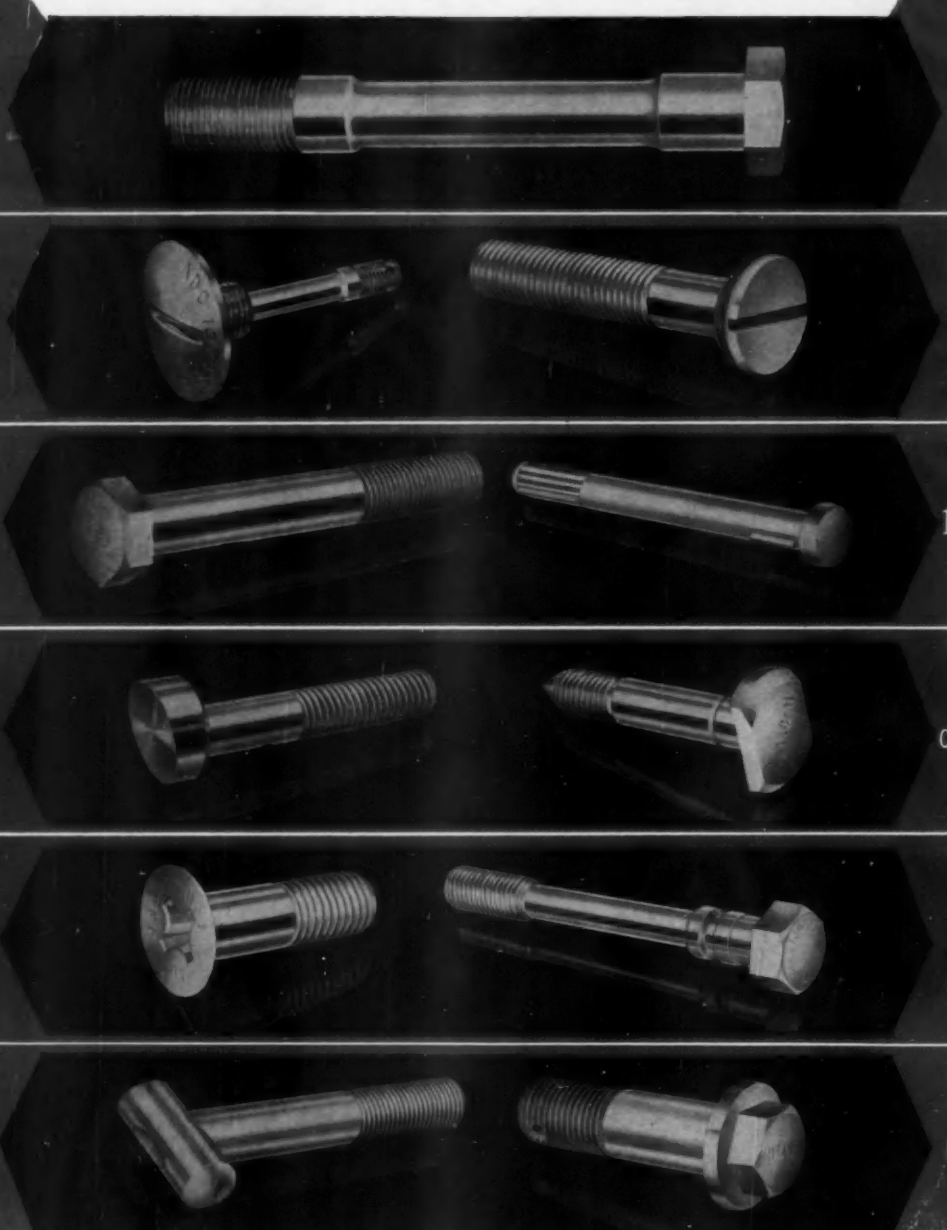
DENISON HydrOILics

1 piece or 1,000,000

call COOPER

for "SPECIALS"...

in alloys and super-alloys for engine airframe automotive and industrial uses



in sizes up to 1½" diameter cold headed or hot forged

...of ALL configurations

For "special" service call Cooper, your MOST EXPERIENCED source of "Specials"...your LARGEST source of in-stock "Standard" fasteners – AN, NAS, and 6-Digit.

Symbol of security in fasteners

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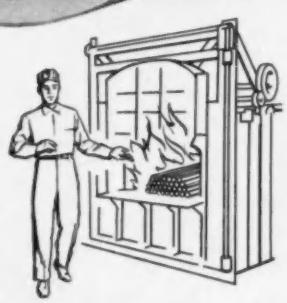
TUBE SIZES
¼" OD to 4-¾" OD
-.025 to .165 wall
STANDARD TUBE CO.
PIPE SIZES
SCH. 40 ⅛" to 2" I.P.S.
SCHS. 5 & 10 ⅛" to 4" I.P.S.
ALL ANALYSES
STANDARD TUBE CO. TYPE 304-L

ANNEALED

Full annealing is one reason why you get the maximum corrosion resistance in each foot of Standard pipe or tubing.



Standard Welded Stainless Pipe and Tubing is formed from only the finest strip steel with every emphasis on uniformity and quality. It is welded by the inert gas shielded arc process. No flux or filler metal is added. Then fully annealed to eliminate stresses and assure uniform structure and maximum resistance to corrosion.

Standard pipe and tubing is produced in a wide range of sizes and grades. Bring your stainless tubing problems to STANDARD . . . rest assured you'll get only the *highest STANDARD* in welded tubing and pipe.

Free 8-page folder on all Standard products. Write Address below.

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Welded stainless tubing and pipe • Welded carbon steel mechanical • Boiler and heat exchanger • Exclusive rigidized patterns • Special shapes • Steel Tubing—Sizes ½" OD to 5½" OD—.028 to .260 wall • Stainless Pipe—Schedule 40: ⅛" to 2" I.P.S.; Schedules 5 and 10: ⅛" to 4" I.P.S.—Stainless Tube—¼" to 4¾" OD—.025 to .165 wall

Several Semi-Standard Machines with

New Snyder Special Transfer Replaces Automation in Processing Forged Steel

Special Features of Snyder Machine No. 55-44

1. Production: 146 pieces per hour.
2. 26 Stations: 28 Operations per piece: 2 milling, 1 sawing, 4 hollow milling, 3 reaming, 1 countersinking, 10 drilling, 5 spotfacing, 1 threading and 1 tapping.
3. Palletized fixtures each carrying two parts.
4. Parts quickly and accurately clamped and located and unclamped by combination torque wrenches and hydraulically operated mechanisms at Stations 1 and 26.
5. Ten individual base segments provide maximum flexibility for future part design changes.
6. Ample room between segments for tool changes and maintenance.
7. Motorized fixture return conveyor with fixture washing unit.
8. Ample chip and coolant facilities.

Standard Features of Snyder Machines

1. SNYDER SELF-CONTAINED UNITS and other units equipped with hardened and ground ways.
2. Threading and tap heads equipped with individual leadscrew spindles.
3. Minimum downtime for tool changes because spindles are arranged for pre-set cutting tools.
4. Standard and special parts interchangeable for speed and economy in maintenance.
5. Motorized automatic lubrication system for all moving parts.
6. Construction to J.I.C. Standards throughout.
7. Master Push Button Panel and Light Console at Station 1.
8. Each unit equipped with its own push button control station for ease of tool setup and manual operation of unit.
9. Electrical interlocks and full depth circuit throughout.
10. Panels equipped with SNYDER CIRCUIT SLEUTH.

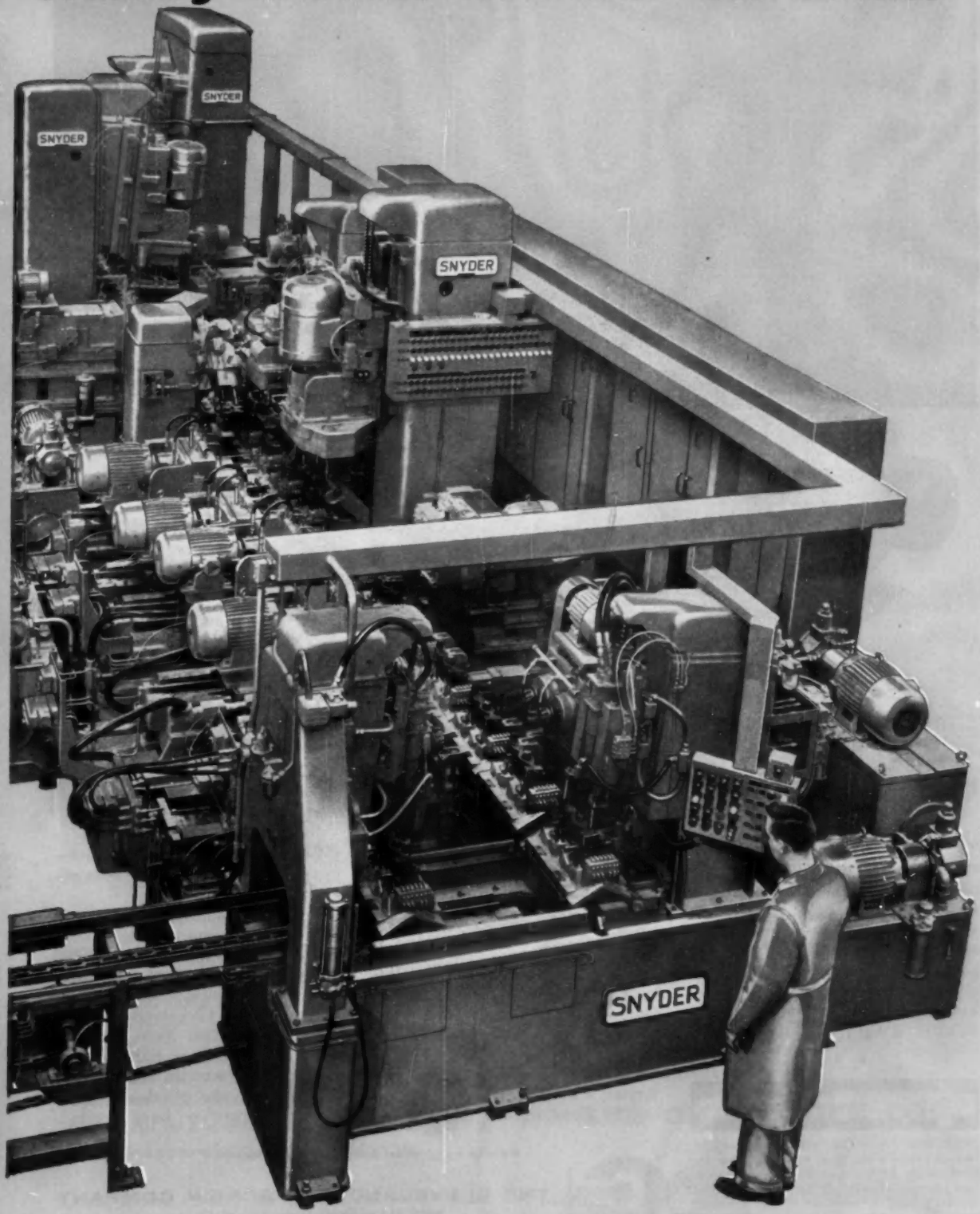
SNYDER

TOOL & ENGINEERING COMPANY

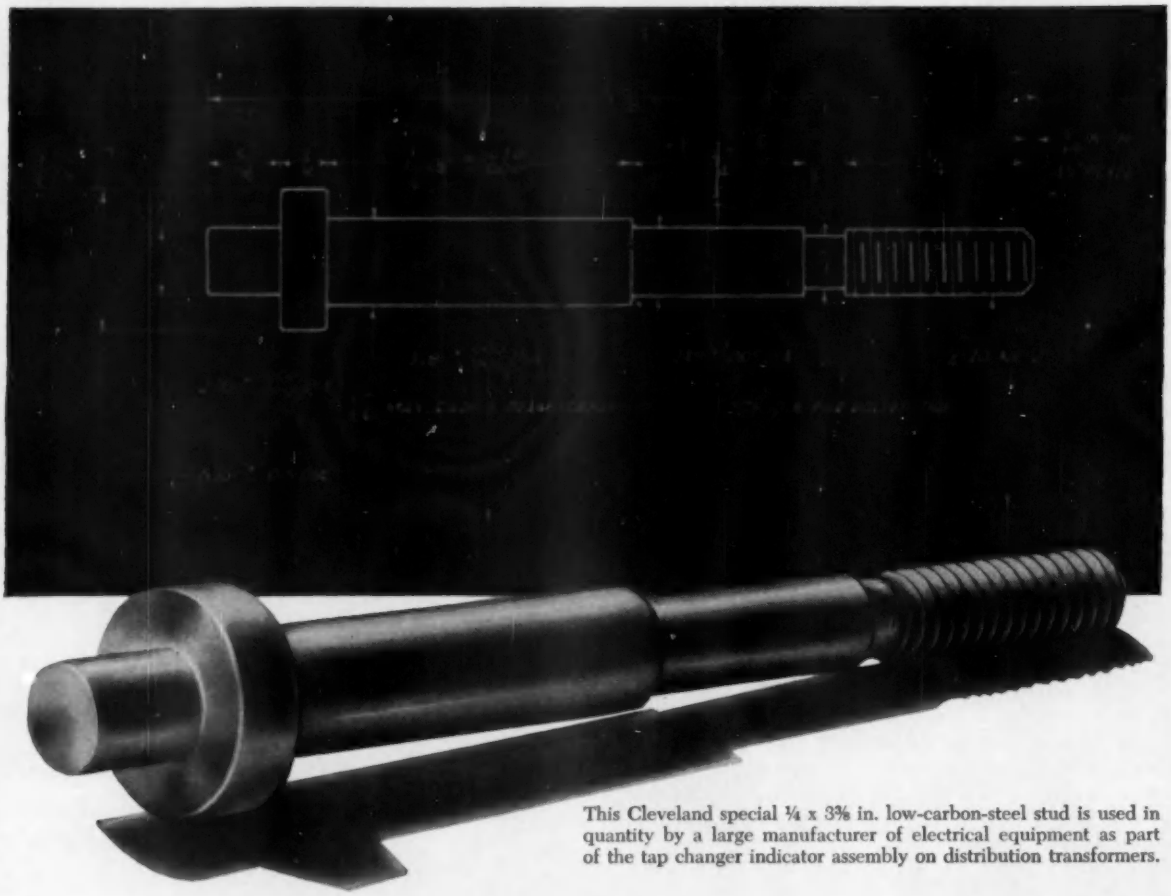
3400 E. LAFAYETTE • DETROIT 7, MICHIGAN

32 Years of Special Machine Tools with Automation

Several Semi-Standard Machines with Steering Knuckles for British Car Builder



CLEVELAND SPECIAL HEADED AND THREADED PRODUCTS



This Cleveland special ¼ x 3⅜ in. low-carbon-steel stud is used in quantity by a large manufacturer of electrical equipment as part of the tap changer indicator assembly on distribution transformers.

Cost of special collar stud is cut 20% by Cleveland's cold forming techniques

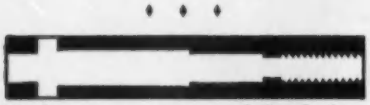
The famous Kaufman Double Extrusion Process which turns out millions of Cleveland precision cap screws yearly is highly adaptable to low-cost production of your fastener-type specials.

The tap changer stud pictured above is typical. Used by a well-known electrical equipment manufacturer, it was previously cut from bar stock. The special head, double shoulders, and groove above the threads meant numerous machining operations and considerable scrap.

Cleveland now cold forms this special stud at 20% less cost to the customer, while holding the specified .005 in. tolerance. And the part is stronger. In the head, threads and fillets, grain flow is symmetrical and unbroken. In addition, the forging action of the Kaufman process toughens surface metal while leaving the core ductile. Both fatigue resistance and tensile strength are thus increased.

We are regularly cold forming close-tolerance specials—many with unusual or extreme upsets—in large quantities. So whether your part is simple or complex, it will pay you to check with Cleveland, particularly at the design stage. There is an excellent chance that through cold forming we can cut the cost and improve the physical properties of the part you have in mind.

♦ ♦ ♦



Black area represents metal that had to be cut away when stud was produced by machining. In the Cleveland cold forming process almost all the metal in the working slug is present in the finished part. The customer saves the difference.

Write for a copy of our folder "Specials by Specialists"

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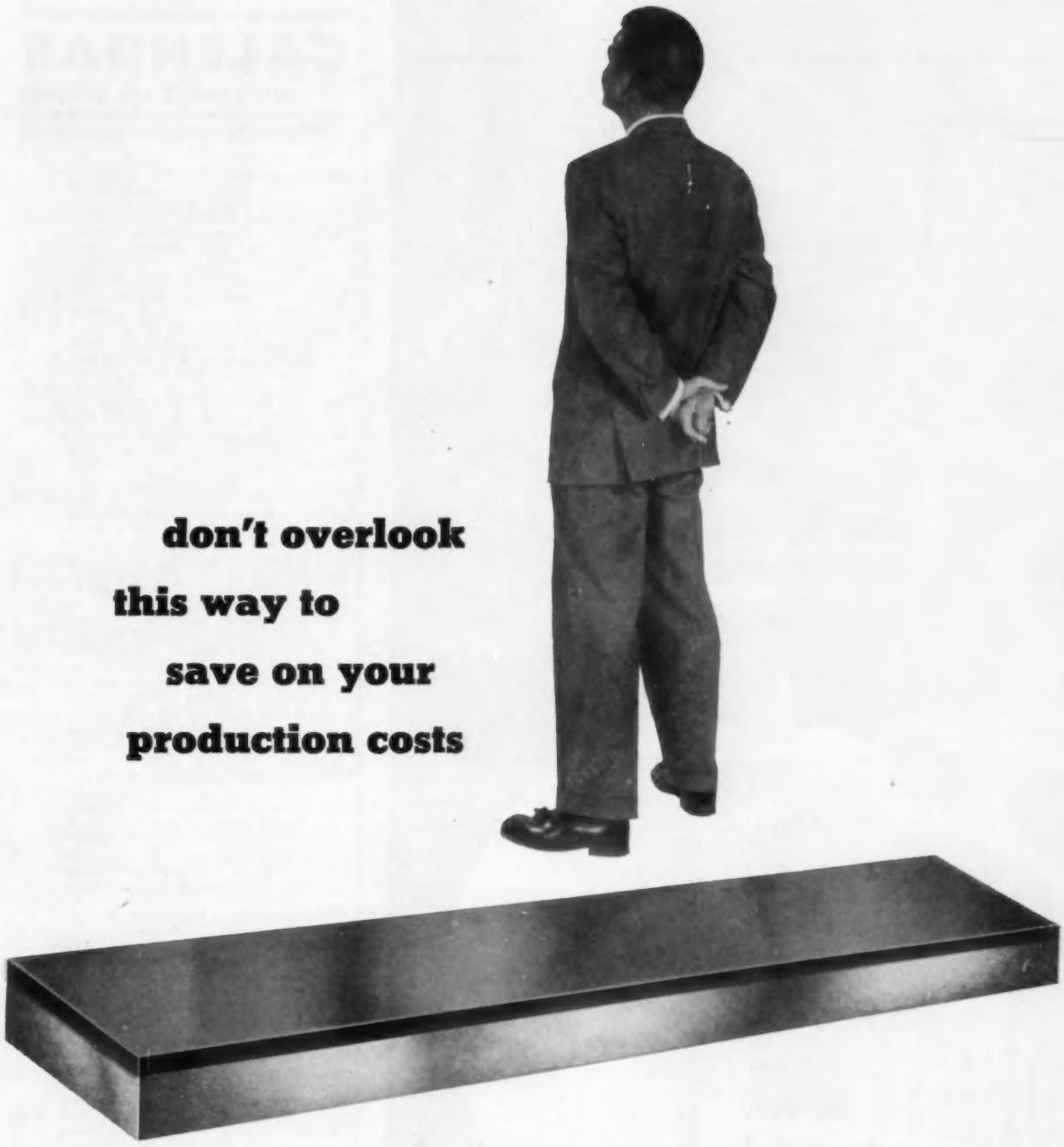

don't overlook this way to save on your production costs

OK aluminum bronze wear plates for cam dies are now being used by the majority of appliance builders and automotive body makers. Here's why: You save approximately 40% under the cost of expensive solid bronze wear plates...and you receive completely finished wear plates, available from stock, ground to ± .0005 parallel and flat. By a unique cladding process, long wearing aluminum bronze is bonded to a steel base, easily machinable for fitting to dies.

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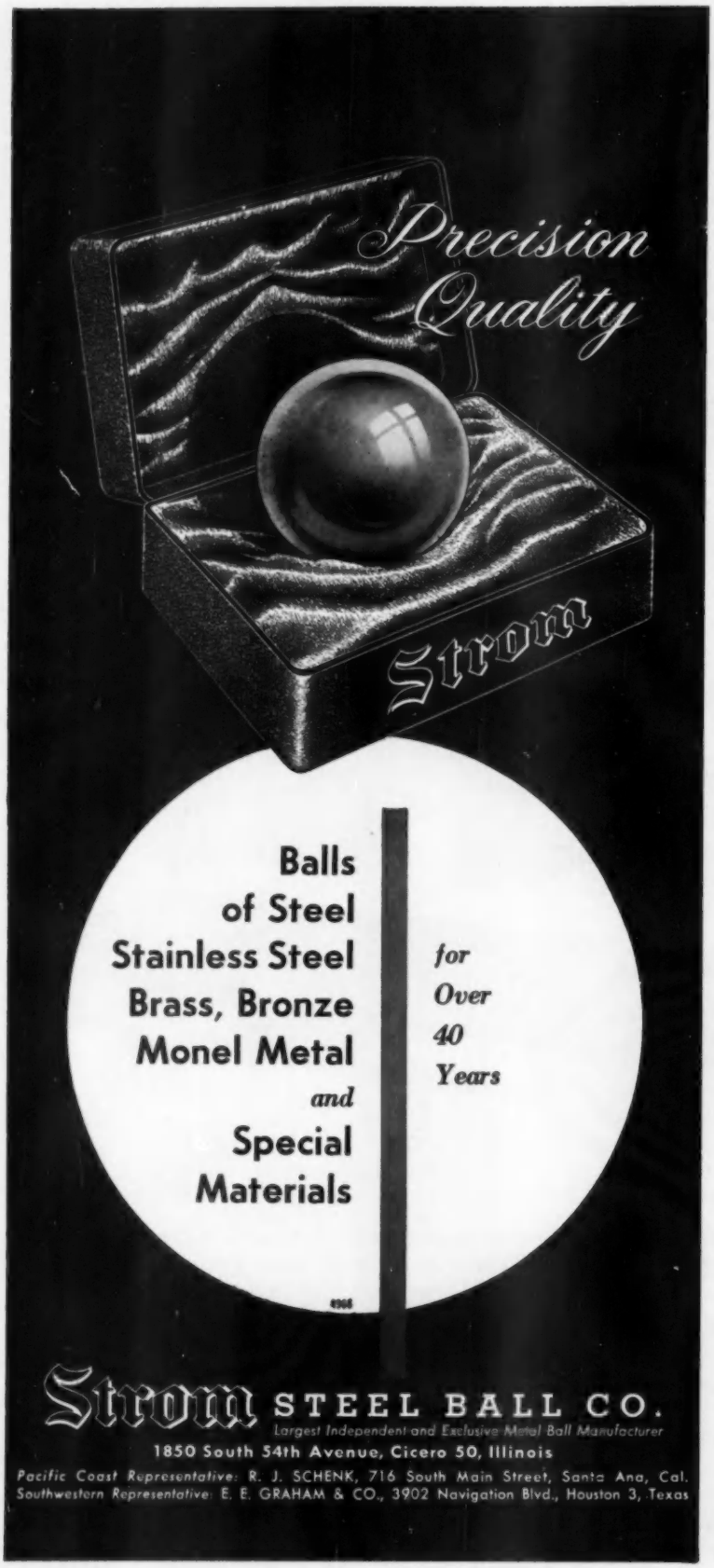
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CALENDAR

OF COMING SHOWS AND MEETINGS

Society of the Plastics Industry, annual national conference and Pacific Coast plastics, exposition, Los Angeles, Calif. ... Mar. 18-21

ASME Gas Turbine Power Conference, Sheraton-Cadillac Hotel, Detroit, Mich. ... Mar. 18-21

SAE National Production Meeting and Forum, Hotel Statler, Buffalo, N. Y. ... Mar. 20-22

American Society of Tool Engineers, silver anniversary technical meeting and convention, Shamrock Hilton Hotel, Houston, Tex. ... Mar. 25-27

Western Metal Congress and Exposition, Los Angeles, Calif. .. Mar. 25-29

ASME Engineering Management Conference, William Penn Hotel, Pittsburgh, Pa. ... Mar. 27-28

American Power Conference, Hotel Sherman, Chicago, Ill. .... Mar. 27-29

SAE National Aeronautic Meeting, production Forum, and Engineering Display, Hotel Commodore, New York, N. Y. ... Apr. 2-5

ASME Instruments & Regulators Conference, Northwestern Univ., Chicago, Ill. ... Apr. 7-10

National Screw Machine Products Association, spring meeting, Shoreham Hotel, Washington, D. C. ... Apr. 7-11

Metal Treating Institute, annual spring meeting, Boca Raton Hotel, Boca Raton, Fla. ... Apr. 8-10

ASME Spring Meeting, Dinkler-Tutwiler Hotel, Birmingham, Ala. ... Apr. 8-10

National Packaging Exposition and Conference, Chicago, Ill. ... Apr. 8-11

American Welding Society, national spring meeting and fifth welding and allied industry exposition, Philadelphia, Pa. ... Apr. 8-12

Conference on Electronics in Industry, Ill. Institute of Technology, Chicago, Ill. ... Apr. 9-10

Sixth Electrical Engineers' Exhibition, Earls Court, London .. Apr. 9-13

Association of Lift Truck and Portable Elevator Manufacturers, Edgewater Beach Hotel, Chicago, Ill. ... Apr. 11

U. S. World Trade Fair, Coliseum, New York, N. Y. ... Apr. 14-27

Lead Industries Association, annual meeting, Drake Hotel, Chicago, Ill. ... Apr. 24-25

National Industrial Research Conference, Conrad Hilton Hotel, Chicago, Ill. ... Apr. 24-25

U. S. Chamber of Commerce, 45th annual meeting, Washington, D. C. ... Apr. 29-May 1

Materials Handling Exposition and Conference, Philadelphia, Pa. Apr. 29-May 3

Metal Powder Association, annual meeting and show, Drake Hotel, Chicago, Ill. ... Apr. 30-May 1

Engineered Castings Show, Cincinnati, O. ... May 6-10

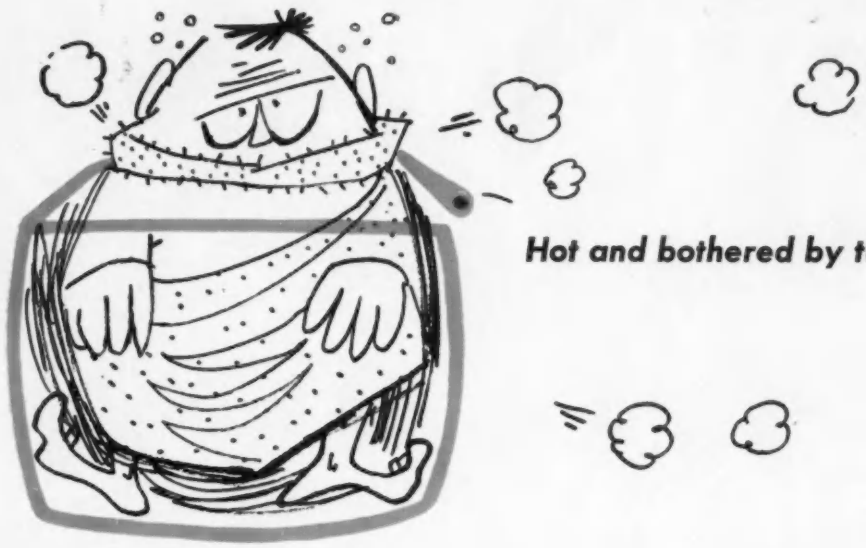
Industrial Tool and Production Show, Toronto, Canada .... May 6-10

AIEE Aircraft Meeting, Biltmore Hotel, Dayton, O. ... May 7-9

American Helicopter Society, annual forum, Sheraton-Park Hotel, Washington, D. C. ... May 8-11

Design Engineering Conference and Show, Coliseum, New York, N. Y. ... May 20-22

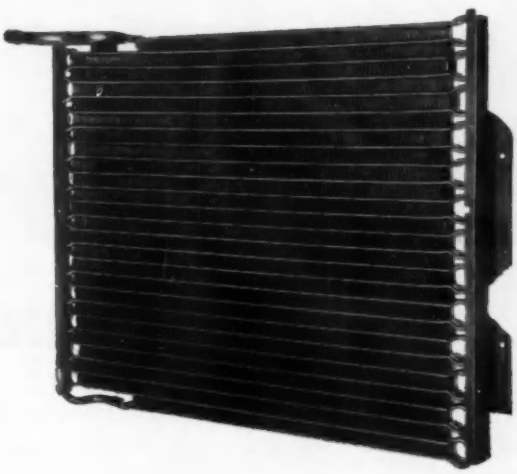
American Society for Quality Control, convention and exposition, Masonic Temple, Detroit, Mich. May 22-24



Hot and bothered by tubing problems?

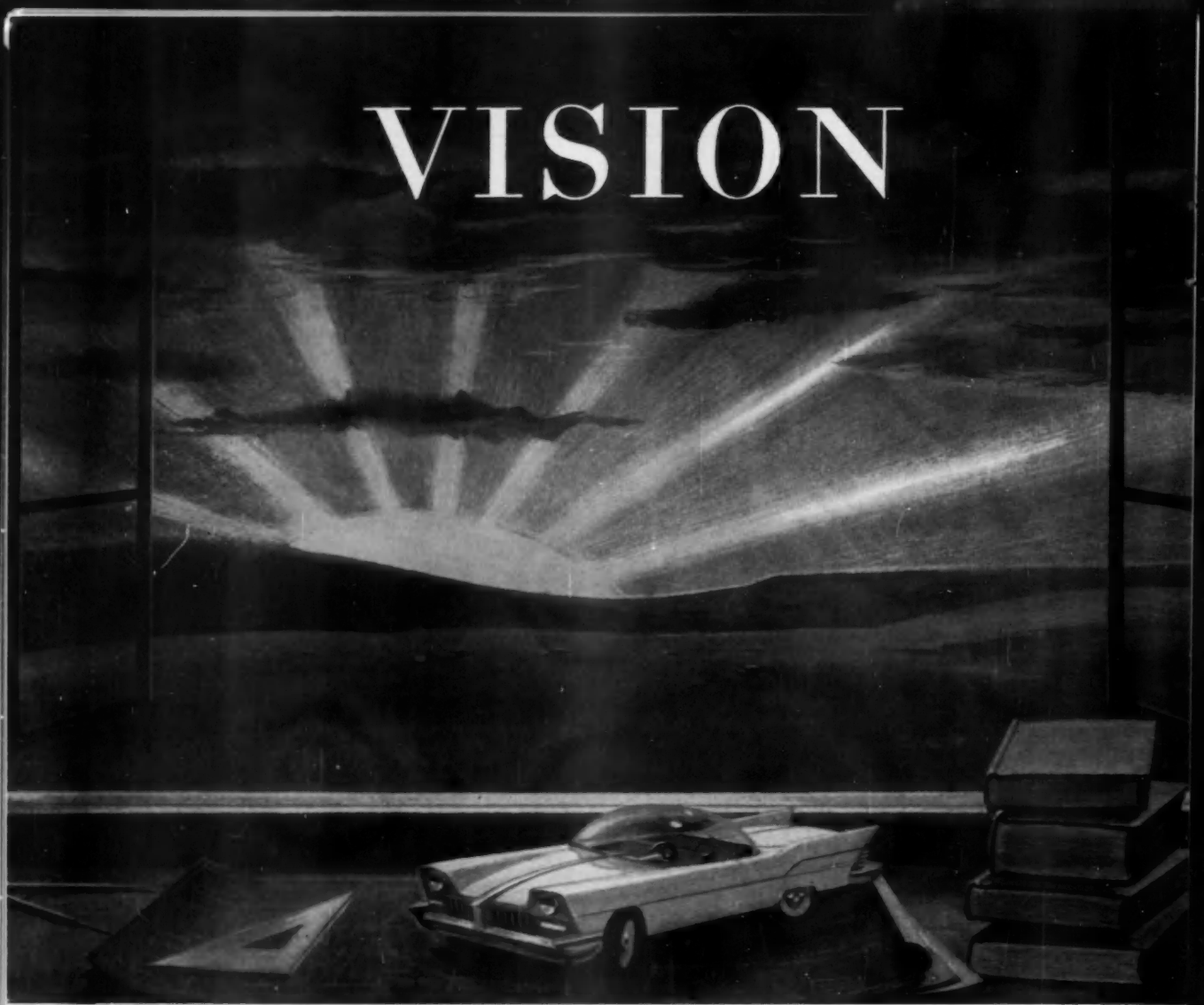
NEW GM STEEL TUBING "FLATTENED SERPENTINE" HELPS HARRISON COOL AIR BY THE CARLOAD

New Harrison Air Conditioning Systems for the '57 GM line use new "flattened serpentine" condensers of GM Steel Tubing. This exclusive development provides more contact area for a better bond, lets less tubing handle a higher heat-transfer volume . . . cuts size and weight, boosts efficiency and strength. It's another GM Steel Tubing "first"... and typical of the resourceful engineering service that's ready to go to work on *your* product problems. Check Sweet's Product Design File 1a/Ro, write us direct or call your Rochester Products Sales Engineer.



GM STEEL TUBING BY ROCHESTER PRODUCTS

ROCHESTER
PRODUCTS
DIVISION OF
GENERAL MOTORS
ROCHESTER N.Y.



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Progress has been the keynote of the automotive industry. Today's achievements are but challenges for the accomplishments of tomorrow.

Over the years Bendix Products Division has contributed significantly to automotive progress. From four wheel brakes to power braking and power steering, Bendix has pioneered and developed many of the industry's most notable advancements.

And today Bendix Products Division is planning new and better products for the cars and trucks of tomorrow.

That's why the industry looks to Bendix* as a source of new ideas, as well as a volume manufacturer of automotive components.

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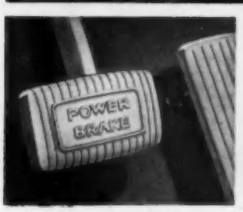
TYPICAL EXAMPLES



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AUTOMOTIVE INDUSTRIES

March 15, 1957 Volume 116, No. 6

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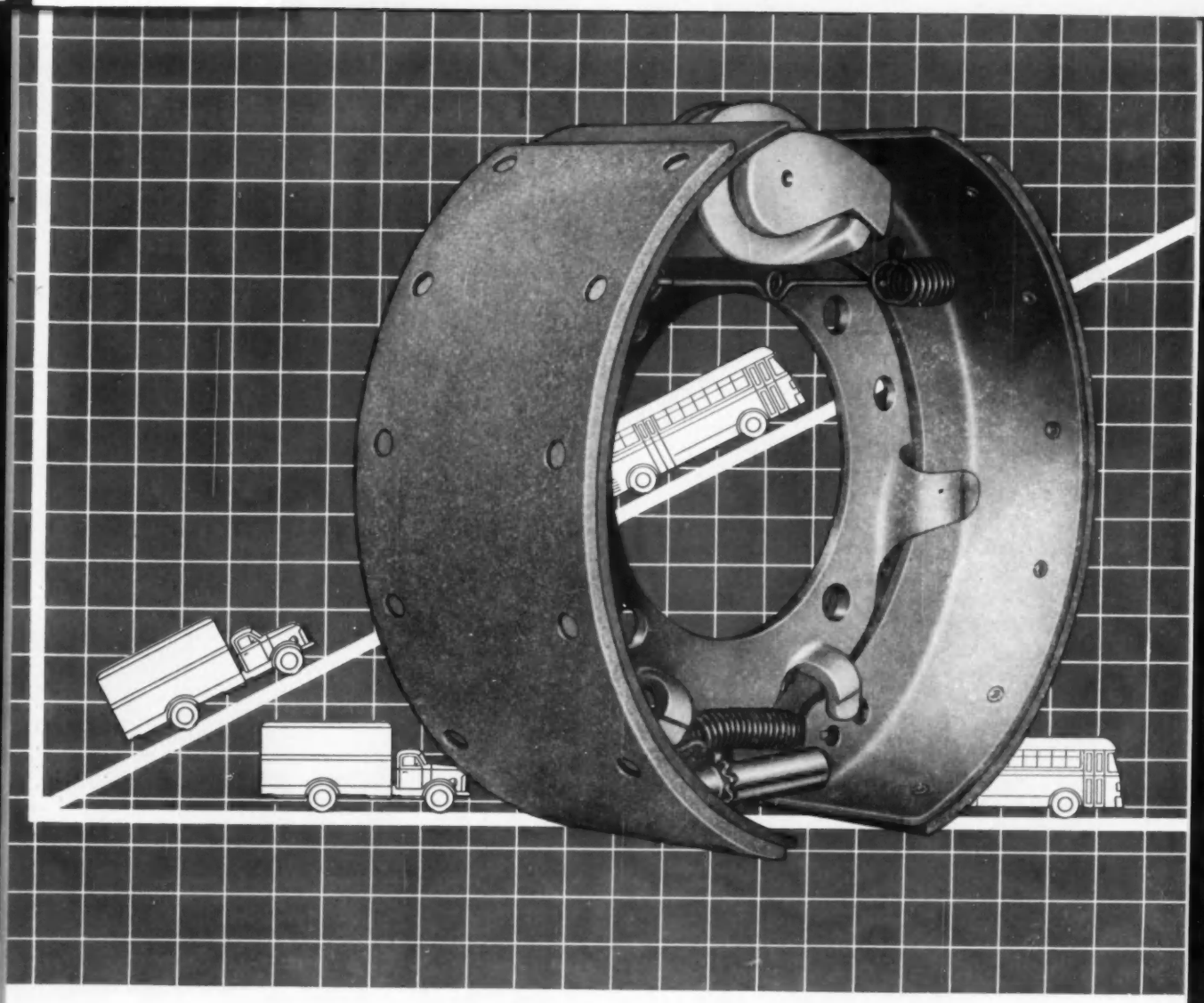

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The Bendix* Duo-Duty auxiliary brake serves the double purpose of a positive parking brake and an emergency road-speed brake.

FOR PARKING, the Duo-Duty brake has ample torque capacity to keep the braked wheels from rolling on any hill or ramp, regardless of how steep.

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Minimum physical pull at the hand lever, less weight, fewer parts, mechanically simple.

A heavy-duty drive shaft brake that is rugged and right . . . built and backed by Bendix.

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Bendix AVIATION CORPORATION

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These sparks reveal vital facts about quality control of steel

You are naturally interested in the quality of your finished products—and if you use steel in making them, you should know about the Ryerson quality controls symbolized by this spark test.

Here a skilled Ryerson inspector is checking the carbon content of a steel bar by "reading" the sparks thrown off by an abrasive wheel. It's an amazingly accurate method of making sure that you get exactly the steel you order.

And this is only one of many rigid quality controls that protect you in every purchase of steel from Ryerson stocks. For example, a heat symbol identifies every bar of alloy steel to avoid the problem of variation from heat to heat. Another example: cylinder tubing can be furnished to more accurate inside diameter through Ryerson specs controlling O.D. and I.D. instead of O.D. and wall.

The result: steel of certified quality—assured by exacting Ryerson controls, whether your product calls for carbon, alloy or stainless steels. And these quality controls become *your* quality controls in your finished product.

These are important points to remember when you specify or purchase steel. You get extra value every time you order from your nearby Ryerson plant.

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In stock: Carbon, alloy and stainless steel—bars, structurals, plates, sheets, tubing, industrial plastics, machinery & tools, etc.

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News of the AUTOMOTIVE AND AVIATION INDUSTRIES

Vol. 116, No. 6 **March 15, 1957**

GM Defense Sales Off in 1956; Capital Outlays at New Height

Further details on the annual report of General Motors for 1956 (see AI, March 1, p. 15) show that GM's share of Government business continued to decrease. It accounted for five per cent of total sales, compared with seven per cent in 1955. Defense sales totaled $552.4 million, against $897.6 million in 1955 and $1.37 billion in 1954.

The report also shows that GM's capital expenditures reached an all-time high of $891 million last year, 18 per cent higher than the previous peak of $755 million spent in 1954. The expenditures included purchase of real estate, plants and equipment, but excluded special tools. It brings to about $4.3 billion the corporation's expenditures in the postwar period.

GM's total tax bill last year was somewhat smaller than in 1955. The tax outlay totaled $1.15 billion, compared with $1.59 billion in the previous year. In addition to U. S. and foreign income taxes, the total bill included provisions for state and local taxes, and social security taxes.

Lower car production last year was reflected in employment rolls. The average number of employes last year totaled 599,243, compared with 624,011 in 1955.

All AMC Cars To Share One Basic Body In '58

Significance of the American Motors announcement that Nash and Hudson will have station wagons in the 1958 line escaped many observers. It means that Nash, Hudson, and Rambler will share basic body stampings next year.

"Stretch" methods, such as GM now uses to lengthen a basic shell, will be used to expand the Rambler stampings to fit the longer wheelbase chassis of Nash and Hudson. Styling identity between the three lines will come from differences in hoods, grilles, fenders, and ornamentation.

NO REVERSE IN BOND CAR

The 1957 three-wheeled Bond Minicar has a single - cylinder, air-cooled engine carried on the steering fork. It swivels through 180 deg with the driven front wheel to give a tight turning circle. The three-speed gearbox has no reverse. There is a combined starter - generator that spins the dead engine backwards when the ignition key is turned counter-clockwise.

S-P Offers 3rd Seat In 'Wagons'; Eliminates Spare Tire As Result

Studebaker-Packard is offering a rear-facing third seat as an extra cost option on its station wagons. As a result, the spare tire has been eliminated so as to provide space in the floor for concealing folding the seat when it is not used.

Buyers specifying the third seat automatically receive four of the new dual chamber tires in lieu of standard type casings. The manufacturer claims the new tires eliminate the need for a spare because the inner section retains enough air pressure to carry a car safely for about 100 miles after the outer tire is punctured.

Studebaker-Packard is the second car company to drop the spare tire. DeSoto eliminated the fifth tire on its top-priced station wagons last year.

Willys Looks For Increase In Latin American Market

Latin America continues to represent an important segment of the Willys export market. Since the company launched an intensive merchandising campaign in that country about a year ago, sales of Willys vehicles have increased considerably in industrial, agricultural and military fields.

This year the company will ship more than $30 million worth of vehicles and spare parts to Latin American countries, a substantial increase over 1956. Willys' new Forward Control Jeep FC-150 is expected to play a big part in boosting overall volume in that country this year.

Ford Expected to Invade Heavy Truck Field in '58

Ford will break into the heavy-duty truck field above 30,000 GVW in 1958. It will invade the area now served by White, Mack, Autocar, International, GMC and others. The unit probably will be offered with air suspension.

News of the AUTOMOTIVE

Car Sales Upturn Sought with Advent of Spring

Industry officials are anxiously watching the new car sales barometer for a clue about financial weather ahead. The next few weeks are critical.

If sales turn upward, they will signal the expected return of the spring upsurge, which did not develop last year. If they hold steady or show only a slight strengthening, it will mean the car builders will have to shorten sail.

So far, there has been little to indicate which way things will go. Sales during February fell slightly behind the same month a year ago. There is some belief, however, that the severe winter this year may have seriously affected demand for new cars.

There also is a body of opinion that because the market did not bloom last Spring, it is almost certain to do so this year. Another factor is the steadily improving picture of outstanding automobile installment credit, which has been declining month by month since last October. As a result, many buyers who were in no position to trade last year now have liquidated their car debt or have built up a trading equity.

Nonetheless, if there is no bulge in the sales curve very shortly, there undoubtedly will be some tapering off of production. It has thus far been in excess of sales to build up stocks needed for a seasonal spurt.

Best information available indicates inventories of new cars around the nation stood at about 725,000 on March 1. This was only 175,000 under the all-time peak of a year ago. Neither dealers nor manufacturers want them to go much higher. From here on, output will be geared closely to sales.

For a proper perspective, it is necessary to look at the most important segments of the industry individually, rather than as a whole. Since General Motors accounts for such a large percentage of the market, any change in its fortunes has a disproportionate impact on the industry's prospects.

Both Ford and Chrysler are well ahead of last year in both production and sales. GM, however, is behind its sales and output pace of a year ago. Due to stepped-up output by Ford and Chrysler, total industry production during the first two months of this year was 17,000 units ahead of last year, despite a drop of about 86,000 units by GM.

On the other hand, sales are estimated to be off five per cent from the same two months of 1956. This is in spite of substantial increases in both numbers and percentage of market by Ford and Chrysler.

Last year, GM had 50.78 per cent of industry sales for the year and sold more cars than all the other companies combined. Consequently, a drop of one percentage point by GM affects industry totals 2½ times as much as the same decline percentage for Chrysler, with an estimated 20 per cent. In the case of Ford, with about 31 per cent, it would require a drop of 1.6 per cent to match a unit decline of one per cent by GM.

1957 WEEKLY U. S. MOTOR VEHICLE PRODUCTION

As reported by the Automobile Manufacturers Association

Make	For Weeks Ending			Total—Jan. 1 to—	
	Mar. 2	Feb. 23	Feb. 16	Mar. 2, 1957	Mar. 3, 1956
PASSENGER CAR PRODUCTION					
Hudson	53	46	37	488	2,414
Nash	126	129	155	1,132	6,059
Rambler	2,110	2,112	2,102	13,672	21,382
Total—American Motors	2,289	2,287	2,294	15,272	29,855
Chrysler and Imperial	4,088	4,233	4,200	35,541	25,616
De Soto	3,553	3,644	3,565	31,647	23,293
Dodge	6,666	6,790	6,715	56,091	40,058
Plymouth	14,713	17,294	16,904	131,088	94,451
Total—Chrysler Corp.	29,020	31,961	31,384	254,367	183,418
Ford	33,676	33,605	33,663	294,123	250,079
Lincoln and Continental	1,115	863	983	10,614	11,621
Mercury	7,647	7,361	7,880	69,576	46,689
Total—Ford Motor Company	42,640	41,829	42,526	374,313	308,389
Buick	10,749	11,347	11,063	101,781	135,890
Cadillac	3,503	3,263	2,972	29,221	29,772
Chevrolet	30,259	27,101	33,748	282,788	319,468
Oldsmobile	11,288	11,211	10,349	90,729	105,487
Pontiac	8,932	8,316	9,449	79,901	90,060
Total—General Motors Corp.	64,731	61,238	67,581	584,320	670,657
Packard	301	344	520	3,856	4,259
Studebaker	1,378	1,281	1,182	9,794	24,390
Total—Studebaker-Packard Corp.	1,679	1,625	1,702	13,650	28,649
Checker Cab	0	88	205	592	145
Total—Passenger Cars	140,359	139,028	145,692	1,242,514	1,221,113
TRUCK PRODUCTION					
Available	6	7	8	43	50
Chevrolet	7,334	7,331	7,796	64,718	75,235
G. M. C.	1,878	1,451	1,438	13,912	18,094
Diamond T	86	80	77	707	840
Divco	80	80	80	685	847
Dodge and Fargo	1,735	1,962	1,889	15,541	15,275
Ford	7,026	8,640	8,312	56,778	57,389
F. W. D.	24	18	26	209	417
International	813	1,384	1,373	15,474	26,841
Mack	343	349	402	3,248	3,418
Reo	71	72	72	571	655
Studebaker	237	234	251	2,128	2,632
White	340	348	345	2,936	3,657
Willys	1,607	1,302	1,962	13,080	11,557
Other Trucks	69	69	69	647	1,026
Total—Trucks	21,649	23,325	24,110	190,677	217,933
Buses	71	60	106	610	643
Total—Motor Vehicles	162,079	162,413	169,908	1,433,801	1,439,689

AND AVIATION INDUSTRIES

ALLOY FOR HOT JETS

Scientists at Westinghouse Electric Corp. have developed a new high-strength, high-temperature metal for use as a gas turbine disk material. Known as W545, it has progressed to the point where 3500-lb ingots have been prepared on a pilot plant scale at the new Westinghouse metals manufacturing plant at Blairsville, Pa. The illustration shows operators at the plant pouring a melt from a furnace.

Reynolds Planning To Build Aluminum Plant In Australia

Reynolds Metals Co. is planning to establish aluminum fabricating facilities in Australia. Initial plans call for the construction of a plant for production of aluminum foil.

Rambler Fuel Injection System To be Priced Under $400 Mark

Fuel injection on the American Motors Rambler Rebel will be priced under $400. It will not be available, however, until approximately April 1.

The company had on hand about 1200 orders for the Rebel when it went into production on March 1, two weeks ahead of the planned production date. More than half of the orders specified fuel injection. Initial output of the Rebel will be restricted to models with a four-barrel carburetor.

The 327 cu. in. V-8 engine used in the Rebel is rated at 288 hp and 350 lb ft torque with the fuel injection system. With four-barrel carburetion horsepower is 255, and torque is 345 lb ft. Drive line and suspension components are designed for high performance. Shock absorbers that can be adjusted for three different qualities of ride—soft, normal, or firm—are

(*Turn page, please*)

AI TABLOID

General Electric Co. plans to spend $28 million to expand and modernize its Schenectady, N. Y., plant.

* * *

Yale Materials Handling Div. of Yale & Towne Mfg. Co. has secured Underwriters' Laboratories GS approval on its entire line of gasoline engine trucks.

* * *

Du Pont Co. is planning erection of a new cellophane plant with a projected annual capacity of 50 million lb near Tecumseh, Kans.

* * *

Jensen Specialties, Inc., has changed its name to Jensen, Inc.

* * *

American Gage & Machine Co. has acquired Standard Transformer Co. . . . Standard Steel Treating Co. has purchased Steel Treat, Inc.

* * *

Vickers, Inc., disclosed that production of airborne hydraulic systems and components was launched at its new Jackson, Miss., plant in January.

* * *

North American Aviation, Inc., is opening a European office in Geneva, Switzerland.

* * *

Fruehauf Trailer Co. is converting its Delphos, O., plant to Government contract work exclusively.

* * *

Germany produced over one million motor vehicles for the first time in 1956.

* * *

Firestone Tire & Rubber Co. will design, build, test, and install a guided missile launching system for Navy submarines.

* * *

Mack Trucks, Inc., has broken ground for a $1.5 million addition to its Sidney, O., plant. . . . Armco Steel Co. plans to spend $50 million to expand its Ashland, Ky., and Houston, Tex., plants.

Datics Corp. is name of new firm formed in Ft. Worth, Tex., to offer data processing and computing services for science and industry.

* * *

Fuel restrictions in Great Britain go beyond the use of gasoline for passenger cars. It is illegal to use butane, propane, and similar gases for operating them.

* * *

Vanadium-Alloys Steel Co. has set up a new Metallurgical Development Group.

* * *

Boeing Airplane Co. has disclosed that its backlog of unfilled commercial and military orders was in excess of $3 billion as of Dec. 31, 1956.

* * *

Mexico buys about $4 million worth of replacement parts for the some 50,000 tractors in the country.

* * *

Grumman Aircraft Engineering Corp. has announced the successful flight of the prototype version of the WF-2 early warning aircraft.

* * *

Fruehauf Trailer Co. has introduced a new livestock van of lightweight construction.

* * *

The Air Force plans to order volume production of the Republic F-105 fighter-bomber.

* * *

Vickers, Inc., has established new Aero Hydraulics, Machinery Hydraulics, Mobile Hydraulics, and International divisions.

* * *

Niagara Machine and Tool Works has moved its Cleveland District Office to 6333 York Road.

* * *

Esso Research & Engineering Co., may build a new laboratory in Florham Park, N. J.

(*Turn to page* 406, *please*)

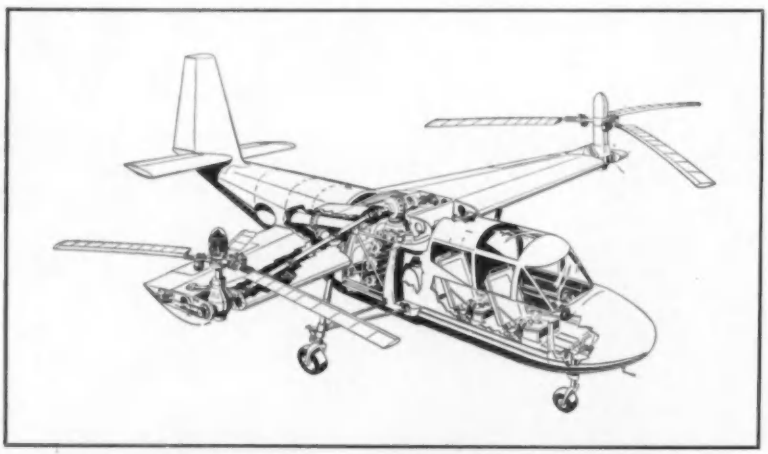
News of the AUTOMOTIVE

FAFNIR BEARING RING PLANT IS WELL MECHANIZED

Shown above is a line-up of automatic screw machines at the new bearing ring plant of Fafnir Bearing Co., Newington, Conn. All the rings required for the 10,000 different types and sizes of bearings made by Fafnir at its main plant in nearby New Britain are produced here. Tubular stock used in these machines is transferred from raw material stores by overhead monorail bridge cranes. Underfloor conveyors are used for chip disposal. Bearing rings are conveyed from the machines to a central washing station by belt conveyors, automatic elevators and roller conveyors.

standard equipment on the vehicle.

The Rebel is offered with either a manual-shift overdrive transmission or Hydra-Matic drive. It will be built in limited quantities to dealer orders. Only one model, a four-door hardtop sedan, will be produced with an advertised delivered price of $2785.



DUAL-PURPOSE AIRCRAFT HAS MARKED FLEXIBILITY

Model 2 Convertiplane, developed by Transcendental Aircraft Corp., is a two-place, high-wing monoplane with a helicopter-type rotor mounted near each wing tip. Electrical actuators permit tilting the rotors from a horizontal (hovering) plane to a vertical (propeller-like) plane once sufficient forward speed has been attained to support the aircraft. Present power plant is the Lycoming 0-435-23 with an output of 250 bhp at 3200 rpm, but slight modifications can be made to the basic airframe of the plane to accommodate the Lycoming T-53 or General Electric T-58 shaft turbine.

Value Of Hudson Stock Set At $9.81 a Share

Shareholders of the old Hudson Motor Car Co., who refused to trade in their stock when the company merged into American Motors, have gained very little in their three-year battle to set a higher value on the stock. Last month, a Circuit Court judge in Detroit ruled, on the decision of appraisers, that the "fair cash value" has been set at $9.8128 a share. This was only 18¾ cents more than they were offered originally when Hudson merged with Nash.

There are approximately 125,000 of the shares outstanding. American Motors will have to pay the dissenting holders about $1.216 million.

The final decision actually is a victory for American Motors. The company had contended that the fair cash value of the stock should not exceed $9.80 a share which is only 1¼ cents less than the final figure set by appraisers.

De Soto Now Offering Ten Special Conversion Models

De Soto reports that it is now offering 10 special conversion models. Included are two for the taxicab business, a market it has reentered after an absence of two years.

In addition to the two taxicabs, the division is making available three specially-built cars for police and fire department use; two station wagons which can be converted into police and industrial ambulances; a special ambulance; a hearse; and a seven-passenger limousine.

All models are built to specific orders. They are available with special heavy-duty batteries and generators, stronger springs and shock absorbers, heavy-duty tires, and a number of other special items.

U.S. Steel Volume Up In '56 But Profit Margin Declines

U. S. Steel Corp. has disclosed that income for the year 1956 was $347.9 million, or a return of 8.2 per cent on sales of $4,228.9 million. This compares with income of $703.1 million, or a return of 9 per cent on sales of $4,097.7 million, for the year 1955.

AND AVIATION INDUSTRIES

Four-Door Hardtop Is Added By Plymouth to Savoy Series

The announcement by Plymouth that it is adding a four-door hardtop to its Savoy series is further evidence of the price resistance that has developed in the higher-priced hardtop class. The car with a V-8 engine carries a factory retail price tag of $2214, or approximately $95 under a comparable model in the top-priced Belvedere series.

Hardtops jumped in popularity last year, but they still have a long way to go before they catch up to conventional sedans in market percentage. Figures released by the Automobile Manufacturers Association show that in 1956 hardtops took 31.2 per cent of total sales. The figure was up four points from 1955, but still far behind the 54 per cent for sedans, which dropped five per cent.

Station wagons also showed a gain in public favor last year in taking 11 per cent of the market, for a gain of 1.4 points over 1955. Convertibles made a very small advance in accounting for 3.4 per cent of the market, compared with three per cent the year before.

Thompson Products Reports Record High Profits in '56

Thompson Products, Inc., reported record high earnings for 1956. Sales reached the second highest level in the company's history.

For the year, Thompson had net income of 13,012,605, up from a 1955 net of $11,340,792. Sales in 1956 were $306,508,120, compared with $286,229,-015 the previous year.

Multiple Headlamps Expected To be Approved by all States

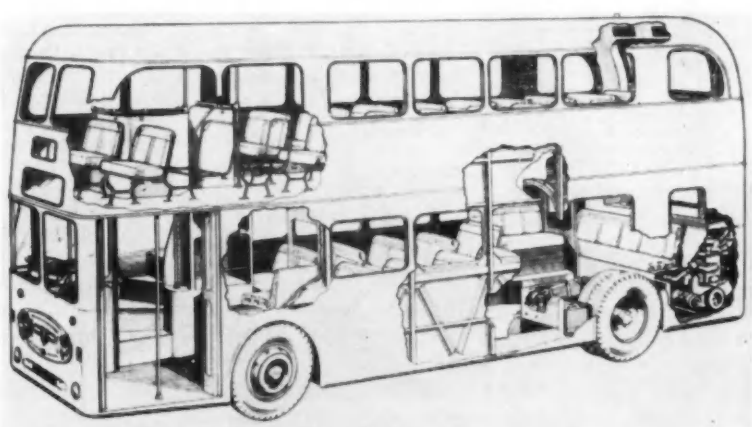
Laws sanctioning use of four headlamps on motor vehicles are expected to be on the books of all states before the end of this year. Eleven states still require statutory changes to legalize the four lamps, and 15 are considering revisions authorizing mounting height of 24 in. above the ground. The latter change is necessary in the case of dual lamps mounted vertically.

GERMAN FORD TRUCK DRIVEN BY V-6 DIESEL ENGINE

The largest (5½ tons) of a new range of German Ford trucks has optional four-wheel drive. A simple overrunning rachet-type clutch in the drive to the forward differential is inoperative when rear wheel traction is normal but the moment wheel spin starts, the clutch takes hold. Engagement is also automatic when reversing. The engine is a V-6 two-stroke Diesel of Austrian design (see AI, March 1, 1954). Scavenged by a Roots-type blower, the 256 cu in. unit develops 125 bhp at 2800 rpm. Smaller trucks in the range are a 4½-ton model powered by the same Diesel or the existing Ford V-8 gasoline engine, and a three-ton unit driven by a V-4 version of the Diesel or the V-8. Many chassis components are common to all three, including the entire cab assembly.

Legislatures in all states requiring either or both such changes in laws are meeting this year. No opposition has been reported to the proposed revisions. Meanwhile, cars with dual headlamps are being marketed in those states under administrative rulings.

(*Turn to page* 416, *please*)



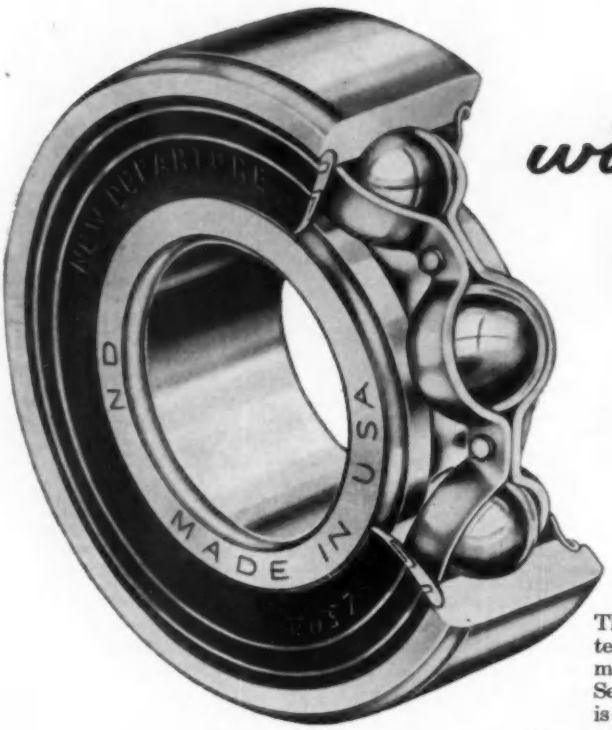
BRITISH REAR-ENGINE BUS AIMS AT RIDER COMFORT

The Leyland Atlantean double-decker, 78-passenger bus has its 125-hp Diesel engine at the rear where it can be quickly removed by a fork lift truck for servicing. Power is transmitted through a centrifugal clutch or fluid coupling, and either an automatic or semi-automatic gearbox can be supplied. Independent front suspension by torsion bars, and special rear springing are other features of the chassis.

FACTS

about

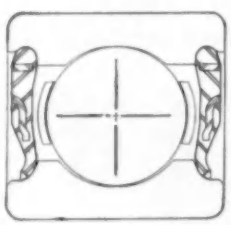
NEW DEPARTURE BALL BEARINGS



with

SENTRI-SEAL

on guard against dirt and wear!



The diagram shows in section the New Departure Sentri-Seal. Lip-contacting surfaces are form-ground simultaneously with the ball race, giving an extremely high degree of concentricity between sealing surfaces and the raceway.

The unique design of the Sentri-Seal gives optimum protection against dirt, and includes a number of other major advantages.

Sentri-Seals can be removed, easily replaced. As the seal is of synthetic rubber in which two metal rings are embedded, a constant-rate spring is created between the rings. Inherent flexibility prevents distortion of the bearing outer ring due to seal insertion, permitting the use of bearings to the higher accuracy specifications. The spring action maintains an efficient sealing contact with the bearing ring to bar dirt and retain lubricant. Sentri-Seals are relatively inert to oils and greases and operate satisfactorily through a temperature range of −40°F. to 225°F. Specifications available for still higher temperatures. In applications where relubrication is desired, it is easily accomplished by the injection method.

SEE "WIDE WIDE WORLD" SUNDAYS—NBC-TV

Sentri-Seal is available for a range of sizes in single-row, standard-width bearings and also in two types of New Departure adapter bearings. Sizes, dimensions and capacities are listed in the latest New Departure catalog.

Write for full details on Sentri-Seal

BALL BEARINGS MAKE GOOD PRODUCTS BETTER

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

Men in the News

Allied Products Div., Motch & Merryweather Machinery Co.—Dan R. Scott was named sales manager.

Ford Motor Co.—**D. S. Harder** has been appointed executive vice-president, and **William C. Ford** has been named vice-president of product planning and styling.

George L. Nankervis Co.—**Harold M. Cherry** has been elected president.

American Motors Corp.—**Walter J. Williams** was appointed assistant secretary.

Michigan Tool Co.—**J. C. Drader** has been named vice-president of research, and **Charles R. Staub** has retired as chief engineer.

Crucible Steel Co. of America—**William H. Knoell** was appointed assistant secretary.

Detroit Transmission Div., General Motors Corp.—**Edward G. Lommel** is now plant engineer, succeeding **George W. Chubb**, retired.

National Automatic Tool Co.—**George H. Clark** has been appointed advertising manager.

Mercury Div., Ford Motor Co.—**Robert J. Fisher** was promoted to advertising and sales promotion manager.

Fisher Body Div., General Motors Corp.—**James H. Wernig** is new general director of product engineering, die engineering, process development, production engineering, and related activities; **Bart Cotter**, chief engineer; **Robert M. McVeigh**, an assistant chief engineer; and **George R. Cook**, general director of purchasing.

Chicago Screw Co.—**Charles R. Farmer, Jr.**, was made advertising manager.

Ford Div., Ford Motor Co.—**John R. Bowers** has been named car advertising manager.

Hamilton Standard Div., United Aircraft Corp.—**Charles M. Kearns, Jr.**, is now an assistant general manager, and **William E. Diefenderfer** was made engineering manager.

Denison Engineering Div., American Brake Shoe Co.—Denison Neale was promoted to director of sales, and Paul W. Norris was appointed vice-president and general manager.

U. S. Rubber Co.—**George R. Vila** has been elected a vice-president and made general manager of the Naugatuck Chemical Div.

Eclipse-Pioneer Div., Bendix Aviation Corp.—**E. A. Carpenter** has become assistant manager of commercial sales.

Carter Carburetor Div., ACF Industries, Inc.—**Wilfred R. Overbey** was appointed manager of manufacturing.

Baker-Raulang Co.—Robert A. Laws was appointed manager of sales engineering.

Detroit Diesel Engine Div., General Motors Corp.—**D. H. Briggs** is now service manager.

Pangborn Corp.—**Arthur J. Buckley** has been promoted to general sales manager.

Electric Storage Battery Co.—**J. S. Hudson** has been appointed corporate director of industrial and public relations.

Pratt & Whitney Co., Cutting Tool Div.—**Ernest S. Griswold** has been named chief product engineer.

R. K. LeBlond Machine Tool Co.—**Robert E. McKee** was made training director.

Firth-Loach Metals, Inc.—**E. J. Reitler** was named sales manager.

Claud S. Gordon Co.—**William J. Hammond** has been elected assistant secretary and a member of the board of directors.

Eaton Manufacturing Co.—Lt. Gen. Bryant L. Boatner, USAF (ret.), is now administrator of engineering.

AC Spark Plug Div., General Motors Corp.—**John R. Church** has become director of aviation sales.

American Brake Shoe Co.—**Arthur K. Watson** has been elected to the board of directors.

Emhart Mfg. Co.—**Robert J. Decker** has been elected vice-president and treasurer.

Firestone Tire & Rubber Co.—**William T. Hepburn** has been appointed manager of passenger tire sales.

Barnes-Gibson-Raymond Div., Associated Spring Corp.—**Oscar L. Joseph** is now plant manager for the Ann Arbor, Mich., plant.

Pratt & Whitney Aircraft Div., United Aircraft Corp.—**Perry W. Pratt** and **Willard L. Gorton** were named assistant engineering manager and chief enginner, respectively, for the main Conn. operations.

Lees-Bradner Co. Manufacturing Div.—**George A. Viscomi** was made sales manager.

Datamatic Corp.—**John E. Johnson** was elected vice-president of sales, and **Lawrence L. Kelbley** was named director of manufacturing.

New Process Gear Corp.—**Victor G. Pike** has been named purchasing director.

Goodyear Tire & Rubber Co.—**Julius A. Lucas** is now manager of field sales; **Robert C. Gannett**, manager of automotive trim materials; **John E. Rennard**, operating manager; **Anthony W. Webner**, manager of Airfoam sales; and **H. Douglas Hurlburt**, manager of automotive floor mat sales in the Engineered Products Dept.

Buckeye Tools Corp.—**Hal O. Gummere** and **Ernest B. Maynard** were elected executive vice-president and vice-president of sales, respectively.

Continued on Page 75

How to get a better finish and extend wheel life

Just be sure to use the grinding fluid that's right for the job—the metal and the type of grinding you're doing. Then you can count on finer finish, faster grinding, fewer rejects, fewer wheel dressings and longer wheel life. Those are the benefits that add up to increased production . . . lower unit costs. Let's be specific—

For surface and centerless grinding an emulsion of *Texaco Soluble Oil* is generally recommended. This has the high cooling ability necessary for this type of work; and will quickly settle out the grinding dirt so wheels won't load. *Texaco Soluble Oil* emulsions are remarkably stable and the oil is an effective rust preventive. Another advantage: operators everywhere remark on the cleanliness of their machines.

For thread and form grinding, there are *Texaco Grindtex Oils*. They are clear and transparent—designed especially for this work. A Texaco Lubrication Engineer will gladly recommend the one to give you the finer finish and lower costs you want.

There is a complete line of *Texaco Cutting, Grinding and Soluble Oils* to help you do all your machining better, faster and at lower cost. Let a Texaco Lubrication Engineer help you. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

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The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO CUTTING, GRINDING, SOLUBLE AND HYDRAULIC OILS

Men in the News

Reynolds Metals Co.—Fred H. Edgar has been made industrial sales manager, automotive.

Continued from Page 73

General Electric Co., Aircraft Gas Turbine Div.—**J. W. Schweikert** and **W. A. Sponzilli** have been named manager of market research and planning and manager of marketing administration, respectively, in the Production Engine Dept.

Mack Trucks, Inc.—**H. L. McNulty** was made general manager of the Great Lakes Div.; **Ray D. Peo,** general manager of the Central Div.; and **Carl K. Revelle,** head of the Western Div.

Goodyear Tire and Rubber Co.—**James A. Merrill** is now associate director of research and development.

Clearing Machine Corp. — **George Herrick** was named Detroit Sales manager, and **Robert H. Barlow** has become a technical consultant.

Hy-Pro Tool Co.—**Jack Merritt** has been appointed direct sales representative in the state of Michigan.

Bendix Aviation Corp., Montrose Div.—**Edward W. Crowley** has been promoted to production control manager, and **Paul E. Horlacher** has become West Coast representative.

Norton Co.—**Stephen Smith** is now manager of the Sales Service Dept.

U. S. Steel Corp.—**M. J. Wurzbach** was made staff director of product information in the Public Relations Dept.

Vickers, Inc. — **George Tate** has been made manager of the new Albertson, L. I., N. Y., regional sales and service office.

Clark Equipment Co., Industrial Truck Div.—**J. R. Blake** is now sales manager of the new Chicago factory branch.

Axelson Mfg. Co., Machine Tool Div.—**William R. Jennings** has been promoted to manager.

U. S. Rubber Co., Naugatuck Chemical Div.—**Earle S. Ebers** and **Harold M. Parsekian** have been made assistant general manager and general sales manager, respectively.

Teller Co., Special Machinery Div. —**Charles L. Zoltani** is now chief engineer.

Goodyear Tire & Rubber Co. — **Thomas F. Cockrem** was promoted to manager of highway transportation.

Ford Motor Co.—**Paul B. Hoffman** has become manager of the Purchasing Administration Dept. in the central purchasing office.

Barnes-Gibson-Raymond Div., Associated Spring Corp.—**Norman Gardner** has been appointed purchasing agent.

Birdsboro Steel Foundry and Machine Co.—**John L. Rose** has been elected works controller.

Wall Colmonoy Corp.—**Walter W. Rogers** is now sales engineer for the Chicago district sales office.

Vickers, Inc.—**Ben W. Badenoch** and **John T. Burns** have been named general manager and general sales manager, respectively, of the Aero Hydraulics Div.; **M. A. Hayden** and **W. F. Driver,** general manager and general sales manager, respectively, of the Machinery Hydraulics Div.; and **Ray Conner** and **Al Lane,** general manager and general sales manager, respectively, of the Mobile Hydraulics Div. **R. E. Esch** heads the new International Div.

Firestone International Co.—**Frank B. Norton** is now sales manager.

Consolidated Electrodynamics Corp., Glendale Div.—**Frank E. Chase** was appointed sales manager.

Pangborn Corp.—**Charles E. Pretzinger** has become Pacific Coast district manager.

Roll Formed Products Co.—**L. C. Colleran** and **W. P. Cooper, Jr.,** have been named sales manager and assistant sales manager, respectively.

Linear, Inc.—**Willard T. Davis** was appointed manufacturing manager.

Burroughs Corp., International Div.—**Ray W. Macdonald** was made vice-president in charge.

Ruberoid Co., Automotive Div.—**Stanton C. Crawford** heads the new Detroit office.

Associated Spring Corp.—H. Perry Smith has been named assistant director of research.

Handy & Harman — **Charles D. Coxe** is now manager of the Metallurgical Dept.

U. S. Chemical Milling Corp.—**Leslie A. Welge** was named manager of manufacturing services.

(*Turn to page* 410, *please*)

Necrology

William V. Smith, 80, retired chairman of Bristol Aeroplane Co., died Feb. 19, at London, England.

Edward R. Hewitt, 90, automotive inventor and organizer of the old Hewitt Motor Co., died Feb. 19, at New York, N. Y.

George H. Townsend, 73, retired power boat manufacturer and one-time official timer for the Indianapolis 500, died Feb. 18, at Fort Lauderdale, Fla.

Norman A. Lomas, 56, purchasing manager for the Aircraft Div. of Bell Aircraft Corp., died Feb. 19 at Buffalo, N. Y.

Harold L. Baldwin, 51, market research manager of Sealed Power Corp., died Feb. 23, at Muskegon, Mich.

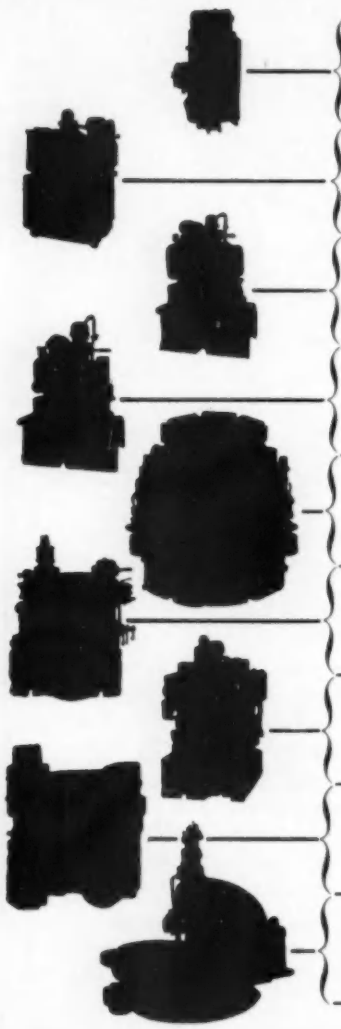
Hans Wickstrom, 86, retired sales representative for the Grinding Machine Div. of Norton Co., died Feb. 13, at Worcester, Mass.

Harold E. Talbott, 69, aviation pioneer and former Secretary of the Air Force, died March 2, at Palm Beach, Fla.

Jesse W. Laws, 76, retired treasurer of General Electric Co., died Feb. 26, at New York, N. Y.

GEAR SHAPERS

FROM 1/16" TO 120" CAPACITY



SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER	MAX. DIAMETRAL PITCH	MAX. FACE WIDTH	MAX. STROKES PER MIN.
		3" FINE-PITCH			
both	yes	3 inches	40 steel, 30 brass	3/4" ext.	2000
		No. 4GS			
both	yes	6 inches	5/7 spur, 6 hel.	2"	635
		7-TYPE*			
both	yes	7" spur, 6 1/2" hel.	6 spur, 6/8 hel.	1 1/2" ext., 1" int.	450
		7A-TYPE			
both	yes	7" spur, 7" hel.	5/7 spur, 6 hel.	2" ext., 2" int.	450
		No. 10 ROTARY			
both	yes	12 inches	3/4 spur, 5/7 hel.	3" ext., 3" int.	500
		6A-TYPE			
both	yes	18 inches	3/4 spur, 5/7 hel.	5" ext., 3" int.	300
		No. 12GS			
both	yes	12 inches	3/4 spur, 5/7 hel.	4" ext., 4" int.	550
		36-TYPE			
both	yes	36 inches	3 spur, 4/5 hel.	6" ext., 6" int.	300
		120-INCH			
both	yes	120 inches	2 spur, 4 hel.	8" ext., 8" int.	148

*Max. P.D. internal—5 1/2"

In addition to the machines listed above, Fellows builds special-purpose equipment for production of gears and related items. Descriptive literature, as well as specific technical data and price information, will be gladly supplied by your Fellows Representative. WRITE, WIRE or PHONE any Fellows Office!

Fellows

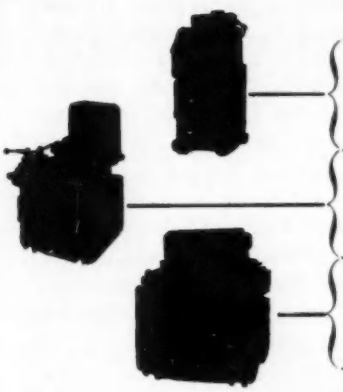
THE FELLOWS GEAR SHAPER COMPANY, 78 River St., Springfield, Vermont

Branch Offices: 1048 No. Woodward Ave., Royal Oak, Michigan • 5835 West North Ave., Chicago 39, Illinois
150 W. Pleasant Ave., Maywood, New Jersey • 6214 West Manchester Ave., Los Angeles 45, California

THE PRECISION LINE

Gear Production Equipment

SHAVING MACHINES



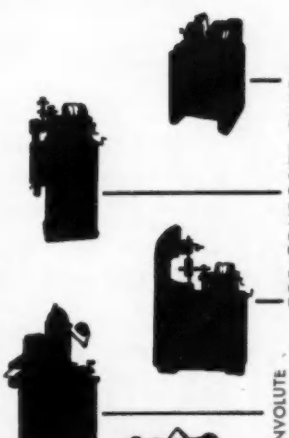
SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER	MAX. DIAMETRAL PITCH	MAX. FACE WIDTH	MAX. SPREAD OF CENTERS
		No. 4 FINE-PITCH			
both	ext. only	4 inches	20	1 inch	12 inches
		No. 8 "FULL-TOOL"			
both	yes	8 inches	4	2 1/2 inches	**
		No. 11 INTERNAL			
both	int. only	***	6	1 1/2" up to 10p; 1", 12 to 16p	***

Also 12", 18" and 24" machines for externals only.

**Depends upon work-holding fixture

***Depends upon design of gear

INSPECTION INSTRUMENTS



	SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER
FOR COMPOSITE CHECK	**No. 4 FINE-PITCH RED LINER**		
	both	yes	4 inches
	No. 8M RED LINER		
	both	yes	***
	No. 20M RED LINER		
	both	yes	18 inches
INVOLUTE PROFILE CHECK	**No. 12M INVOLUTE MEASURING**		
	both	yes	12 inches
CHECKING LEAD CROWN & TAPER	**No. 12H LEAD MEASURING**		
	both	yes	12 inches

Nos. 24M Involute and 24H Lead Measuring Instruments with capacity of 24 inches

***Depends upon design of gear

Fellows Injection Molding Machines

These high-speed, fully automatic injection molding machines provide the ultimate in temperature control, easy clamping, safety and other money-making advantages.

MODEL 6-200 available with "Pre-Pack and Pre-Position" device provides up to full 8-ounce shots...dry-run speeds to 650 c.p.h....takes 12" x 24" molds horizontal, 15" x 21" vertical, 8" x 14" thick.

MODEL 3-125 delivers up to 10 shots per minute . . . 45 pounds per hour plasticizing capacity . . . 20,000 p.s.i. injection pressure for pin-point gating.

Unusually Tough BOLTS!

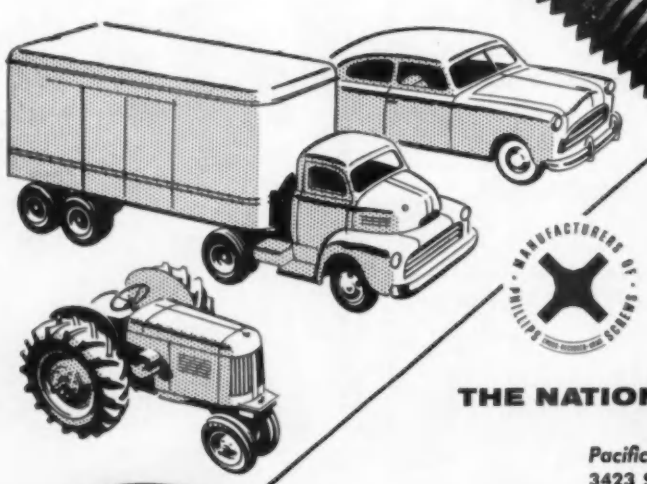
As vital parts of tractors, dirt movers and other heavy-duty equipment, these big bolts can take a terrific beating and still hold fast. They will resist shear, fatigue and impact that no common bolts could withstand without wear or breakage. Special heat-treatment produces this unusual toughness, making these National bolts capable of enduring extremely severe stresses.

By cold heading and special production methods, National can turn out many special headed-and-threaded fasteners which, like these bolts, solve special problems or reduce costs. Depend on National's extensive manufacturing facilities and complete line of fasteners for your needs.

Write for a free copy of National's "Special" fastener booklet.

Representatives in:

Chicago	Indianapolis	Philadelphia
Cincinnati	Kansas City, Mo.	Portland
Dallas	Lansing	Rochester
Denver	Milwaukee	San Francisco
Detroit	Minneapolis	St. Louis
	New York	



MANUFACTURERS OF PHILLIPS RECESS SCREWS

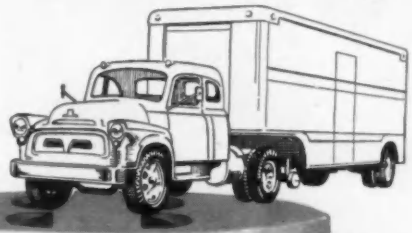
THE NATIONAL SCREW & MFG. COMPANY
CLEVELAND 4, OHIO
Pacific Coast: National Screw & Mfg. Co. of Cal.
3423 South Garfield Ave., Los Angeles 22, Cal.

National PRODUCTS

Fasteners Hodell Chains Chester Hoists

Rapidly becoming the

Standard of the Automotive Industry



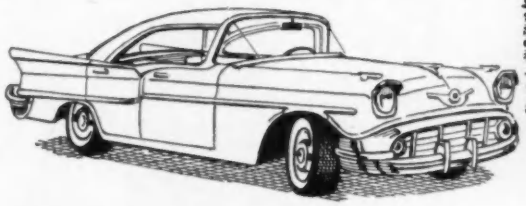
INCREASES ENGINE LIFE UP TO 400%

STERLING'S great "Conformatic" piston with "Intra-Cast" steel ring groove liners give sensationally longer life to rings and grooves—

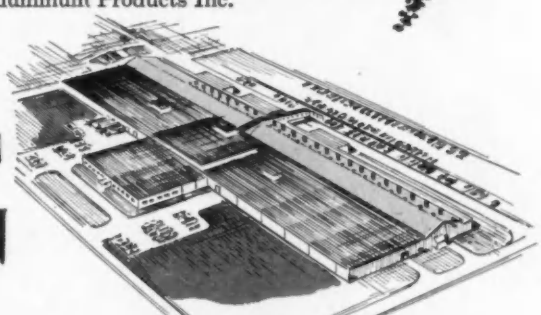
Recommended clearances for "Conformatic" pistons are from 0 to ½ thousandth inch. This clearance is maintained hot and cold providing unbelievable bore stability.

STERLING'S CONFORMATIC PISTON WITH INTRA-CAST STEEL LINED GROOVES

prevents frictional horsepower loss, reduces oil consumption to an absolute minimum, and prolongs engine life up to 400%. *Intra-Cast* and *Conformatic* are registered trade names of STERLING Aluminum Products Inc.



Sterling's revolutionary *Conformatic* piston already has been accepted and is now being used in a number of America's finest and most popular passenger cars.



NEW MANUFACTURING FACILITIES FOR STERLING ALUMINUM

120 acres! Completely new automated plant at the confluence of the Missouri and Mississippi Rivers

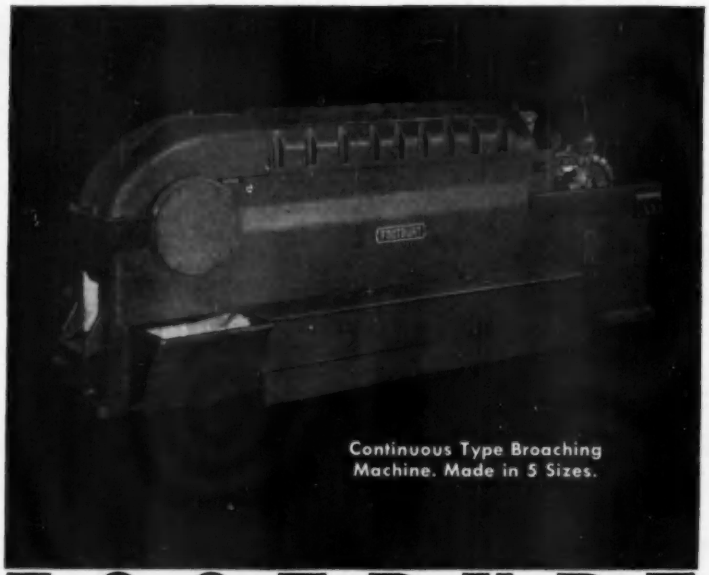
STERLING

ALUMINUM PRODUCTS INC.

ST. CHARLES, MISSOURI

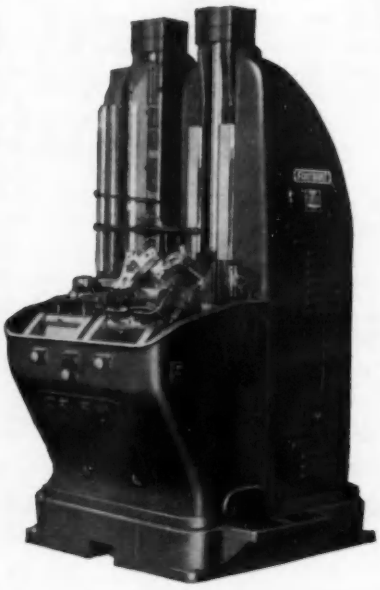
SA-1

WORLD'S LARGEST MANUFACTURER OF ALUMINUM ALLOY PISTONS



Continuous Type Broaching Machine. Made in 5 Sizes.

Duplex Surface Broaching Machine. Made in 5, 10, 15 and 25 Ton Sizes.

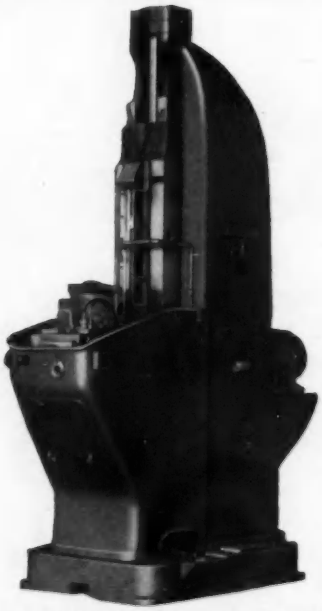


FOOTBURT

a faster *More Economical* machine operation

■ Footburt Surface Broaching may be the answer to your problem of faster machining. Many jobs that were slow and expensive when handled by conventional machining methods are now being produced by Surface Broaching. Production in most cases is as fast as the speed at which parts can be loaded. Yet cutting speeds are so low that the cost of tool maintenance shows great savings. Exceptional finish can be maintained. We will gladly discuss your machining problems with you.

THE FOOTE-BURT COMPANY
Cleveland 8, Ohio • Detroit Office: General Motors Building

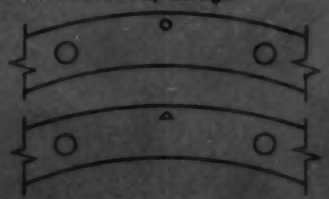
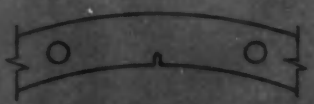
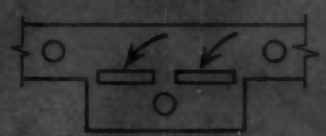
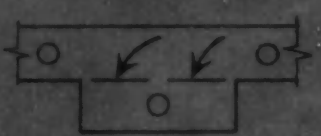


Single Slide Surface Broaching Machine. Made in 5, 10, 15 and 25 Ton Sizes.

FOOTBURT

PIONEERS IN SURFACE BROACHING

How to remedy four common errors in gasket design

DETAIL	WHY FAULTY	REMEDY
Bolt holes close to edge.	Causes breakage in stripping and assembling.	Projection or "ear." Notch instead of hole.
Very small holes or non-circular openings. 	Require hand picking; easy to miss picking the pills.	Avoid hole sizes under 3/32-inch diameter. If purpose of hole is to locate or index, change hole to notch. 
Tear-away parts with open slots at attached edges. 	Slots require hand picking, costly dies and die maintenance.	Use simple perforation. 
Metalworking tolerances applied to gasket thickness, diameters, length, width, etc.	Results in perfectly useable parts being rejected at incoming inspection. Requires time and correspondence to reach agreement on practical limits. Increases cost of parts and tooling. Delays deliveries.	Most gasket materials are compressible. Many are affected by humidity changes. Try standard or commercial tolerances before concluding that special accuracy is needed.

As the examples above show, simple changes in gasket design or specification can result in savings in gasket cost and handling time.

Changes in joint design, too, can be helpful. Stiffening a flange, for example, will prevent flange bending —which has been found to cause about 90% of all joint leaks. Decreasing the gasket area and putting bolt holes closer together are other ways to cure this trouble. For more information on gasket selection and use, please write for the booklet shown at the right or call your Armstrong representative for assistance.

SEND FOR 1957 EDITION OF "ARMSTRONG GASKET MATERIALS"

This 16-page booklet discusses the choice of proper gasket materials and describes Armstrong cork, cork-and-rubber, synthetic rubber, and fiber sheet materials. Included are government and SAE-ASTM specifications. Look for this booklet in Sweet's product design file. Or for a personal copy, write Armstrong Cork Company, Industrial Division, 7103 Imperial Ave., Lancaster, Pa.

Armstrong GASKET MATERIALS

. . . used wherever performance counts

(Advertisement)

R B&W FASTENER BRIEFS

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY

Technical-ities

By John S. Davey

Factor of Safety— make it a reality

You can't calculate that with a bolt having yield strength of 4 times the working load you're automatically getting a *safety factor* of 4. Far from it. Only when the bolt is *tightened* to four times working load do you get it.

That's because rigidly fastened members can be externally loaded to the full value of residual tension in bolts without any separation or extra bolt stress.

Suppose you need a bolt for a 5000 lb. working load. For a X4 safety factor, you use a bolt of 20,000 lb. capacity, and tighten it to 20,000 lb. tension. If you tighten to only 10,000 lbs., any external load larger than this causes loosening, and progressive bolt failure from fatigue. So your safety factor is really only 2.

PRODUCTION MAN FOLLOW-THROUGH IMPORTANT

Factor of safety, then, is not established on the drawing board. It can only be put into the product by the shop man with wrench. In short, a bolt is no better than the supervision of its tightening.

A NOTE ON FLEXIBLE JOINTS

This case is different. You tighten such a joint just to working load. So use a bolt capable of this *plus* any added stress *multiplied* by your safety factor.

How to simplify bolt and nut usage

DESPITE their now unified dimensions, "standard" fasteners number thousands upon thousands of different types and sizes. More and more companies are beginning to realize that *usage* simplification offers advantages.

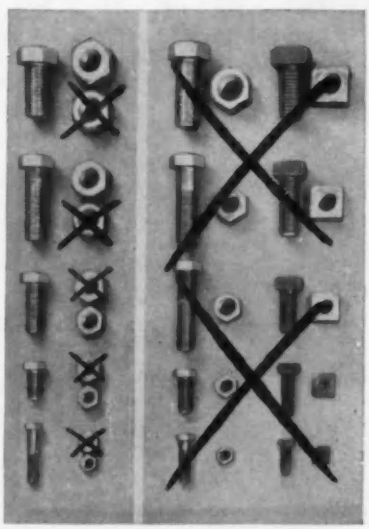
EXAMPLES

A well known electrical manufacturing company finds it no handicap to eliminate all 1/16" bolt sizes above 3/8", thereby simplifying production and purchasing.

One engineering firm eliminated 1700 different fastener items from inventory by determining that the jobs could be done as well by other sizes or types.

SOME SUGGESTIONS

To guide your thinking, RB&W points up the following ways to simplify: (1) Forget thread fits for all but specialized needs – standard "tolerance fits" have thoroughly proved themselves. (2) Why adhere to double thread standard when coarse threads prove stronger and assemble faster? (3) Stick with hex head bolts – they do better jobs than square. (4) It can save money to change diameter or length, rather than to add another item to stock. (5) Two standard physical grades meet most load range requirements – do you really need special alloys? (6) Heavy nuts really belong with larger size bolts – use finished nuts with the smaller sizes.



Here is a graphic display of possible simplification. From a typical array of fasteners, it shows what may be superfluous for meeting the requirements of proper fastening in a great many instances.

RB&W would be happy to enlarge on these facts, and help you simplify fastener selection to get proper joint strength and cut assembly time and inventory. Write Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y.

Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Additional sales offices at: Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco.

High strength bolts save costly crane

At one company's plant, a large, heavy-duty crane had deteriorated due to rivets loosening. Replacing with new rivets was no permanent answer, but RB&W high tensile bolts were.

Used with hardened washers, these RB&W bolts clamp members together so tightly, no slipping into bearing takes place, holes are reinforced against fatigue, and connections become vibration-proof.

Assembling heavy duty equipment with RB&W high strength bolts in the first place can avoid such problems and create more satisfaction with the product.

MOTOR VEHICLE SECTION

CARS · TRUCKS · BUSES · TRAILERS · TRACTORS

PRODUCTION

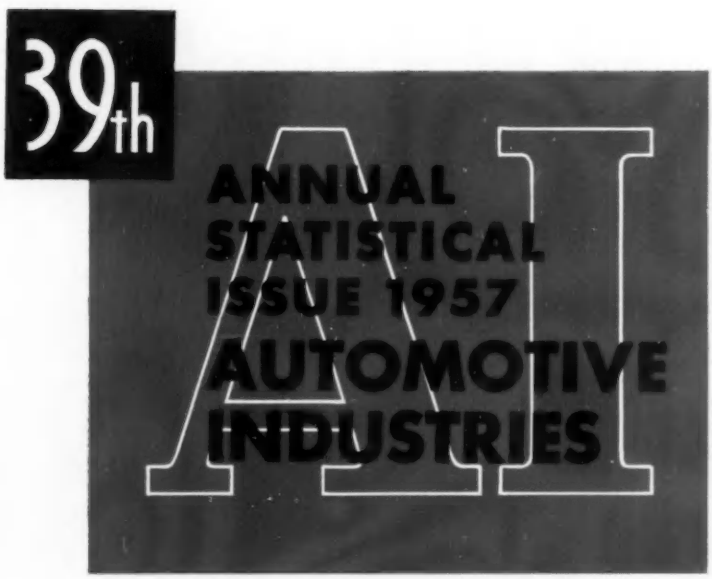
NEW REGISTRATIONS

DISTRIBUTION OUTLETS

TOTAL REGISTRATIONS

EXPORTS

SPECIFICATIONS



more than 3 letters

amp

a symbol that stands for quality products that give lasting satisfaction

AMERICAN METAL PRODUCTS CO. Manufacturers of parts for the automotive, truck and aircraft industries, including: front and rear seat assemblies—stampings—zig-zag and formed wire springs—axle housings—torque tubes—bumpers—4-way and 6-way seat adjusters—jet engine components—storage racks for materials handling.

ALLIANCEWARE, INC. Manufacturers of porcelain-on-steel bathtubs, lavatories and sinks for home, business and industry—also distributors of vitreous china closets.

BORROUGHS MANUFACTURING CO. Manufacturers of steel office furniture — library shelving—bookcases—supply cabinets—wrap racks—automotive storage bins—steel shelving.

GENERAL SPRING PRODUCTS, LTD. Manufacturers of zig-zag and formed wire springs —front and rear seat frame assemblies for the Canadian automotive and truck industry.

TUBE REDUCING CORP. Manufacturers of processed tubing for bearing, cylinder and aircraft industries.

Locations of American Metal Products Company and its Subsidiaries

AMERICAN METAL PRODUCTS CO.

5959 Linsdale Avenue, Detroit 4, Michigan

PRODUCTION

PASSENGER CARS • TRUCKS • BUSES • TRACTORS • TRAILERS

Factory Sales and Their Wholesale Value, U. S. Plants

As reported by the Automobile Manufacturers Association

Year	PASSENGER CARS			TRUCKS AND BUSES			TOTAL	
	Number of Units	Wholesale Value†	Average Wholesale Price	Number of Units	Wholesale Value†	Average Wholesale Price	Number of Units	Wholesale Value†
1900	4,192	$ 4,899,443	$1,169	.....	.....	....	4,192	$ 4,899,443
1901	7,000	8,183,000	1,169	.....	.....	....	7,000	8,183,000
1902	9,000	10,395,000	1,155	.....	.....	....	9,000	10,395,000
1903	11,235	13,000,000	1,157	.....	.....	....	11,235	13,000,000
1904	22,130	23,357,692	1,055	700	$ 1,272,747	$1,818	22,830	24,630,429
1905	24,250	38,670,000	1,594	750	1,330,000	1,773	25,000	40,000,000
1906	33,200	61,460,000	1,851	800	1,440,000	1,800	34,000	62,900,000
1907	43,000	91,620,000	2,131	1,000	1,780,000	1,780	44,000	93,400,000
1908	63,500	135,250,000	2,129	1,500	2,550,000	1,700	65,000	137,800,000
1909	123,990	159,765,721	1,288	3,297	5,333,683	1,618	127,287	165,099,404
1910	181,000	215,340,000	1,189	6,000	9,660,000	1,610	187,000	225,000,000
1911	199,319	225,000,000	1,128	10,681	21,000,000	1,966	210,000	246,000,000
1912	356,000	335,000,000	941	22,000	43,000,000	1,954	378,000	378,000,000
1913	461,500	399,902,000	866	23,500	44,000,000	1,872	485,000	443,902,000
1914	548,139	420,838,378	768	24,900	44,219,096	1,776	573,039	465,057,474
1915	895,930	575,978,000	643	74,000	125,800,000	1,700	969,930	701,778,000
1916	1,525,578	921,378,000	604	92,130	161,000,000	1,747	1,617,708	1,082,378,000
1917	1,745,792	1,053,505,781	603	128,157	220,982,668	1,724	1,873,949	1,274,488,449
1918	943,436	801,937,925	850	227,250	434,168,992	1,910	1,170,686	1,236,106,917
1919	1,651,625	1,365,395,415	827	224,731	371,422,820	1,653	1,876,356	1,736,818,235
1920	1,905,560	1,809,170,962	949	321,789	423,249,410	1,315	2,227,349	2,232,420,372
1921	1,468,067	1,038,191,037	707	148,052	166,070,810	1,122	1,616,119	1,204,261,847
1922	2,274,185	1,494,513,991	657	269,991	226,049,658	837	2,544,176	1,720,563,649
1923	3,624,717	2,196,272,116	606	409,295	308,537,929	754	4,034,012	2,504,810,045
1924	3,185,881	1,970,096,559	618	416,659	318,580,580	765	3,602,540	2,288,677,139
1925	3,735,171	2,458,370,026	658	530,659	458,400,277	864	4,265,830	2,916,770,303
1926	3,783,987	2,640,064,519	698	516,947	452,123,435	875	4,300,934	3,092,187,954
1927	2,936,533	2,164,670,891	737	464,793	420,130,624	904	3,401,326	2,584,801,515
1928	3,775,417	2,572,599,143	681	583,342	460,108,903	789	4,358,759	3,032,708,046
1929	4,455,178	2,790,614,309	626	881,909	622,533,897	706	5,337,087	3,413,148,206
1930	2,787,456	1,644,083,152	590	575,364	390,752,061	679	3,362,820	2,034,835,213
1931	1,948,164	1,108,246,698	567	432,262	265,444,618	614	2,380,426	1,373,691,316
1932	1,103,557	616,860,347	559	228,303	137,624,157	603	1,331,860	754,484,504
1933	1,560,599	773,424,963	496	329,218	175,380,863	533	1,889,817	948,805,826
1934	2,160,865	1,140,478,174	526	576,205	326,781,658	567	2,737,070	1,467,259,862
1935	3,273,874	1,707,836,325	522	697,367	380,997,330	546	3,971,241	2,088,833,655
1936	3,679,242	2,014,747,225	548	782,220	463,719,466	593	4,461,462	2,478,466,691
1937	3,929,203	2,240,912,620	570	891,016	537,314,633	603	4,820,219	2,778,227,253
1938	2,019,566	1,241,032,295	615	488,841	329,917,646	675	2,508,407	1,570,949,941
1939	2,888,512	1,770,231,597	613	700,377	489,786,701	699	3,588,889	2,260,018,298
1940	3,717,385	2,370,654,082	638	754,901	567,820,414	752	4,472,286	2,938,474,497
1941	3,779,682	2,567,205,996	679	1,060,820	1,069,799,855	1,008	4,840,502	3,637,005,851
1942	222,862	163,813,559	736	818,662	1,427,456,801	1,744	1,041,524	1,591,270,360
1943	139	101,799	....	699,689	1,451,794,475	2,076	699,828	1,451,896,274
1944	610	446,704	....	737,524	1,700,928,938	2,306	738,134	1,701,375,642
1945	69,532	57,254,655	823	655,683	1,181,955,532	1,803	725,215	1,239,210,187
1946	2,148,699	1,979,781,084	921	940,866	1,043,247,276	1,109	3,089,565	3,023,028,360
1947	3,558,178	3,936,017,000	1,106	1,239,443	1,731,713,000	1,397	4,797,621	5,667,730,000
1948	3,909,270	4,870,422,000	1,246	1,376,274	1,880,475,000	1,366	5,285,544	6,750,898,000
1949	5,119,466	6,650,857,000	1,299	1,134,185	1,394,035,000	1,229	6,253,651	8,044,892,000
1950	6,665,863	8,468,127,000	1,270	1,337,193	1,707,748,000	1,277	8,003,056	10,175,885,000
1951	5,338,435	7,241,275,000	1,356	1,426,828	2,323,859,000	1,629	6,765,263	9,565,134,000
1952	4,320,794	6,455,114,000	1,494	1,218,165	2,319,789,000	1,904	5,538,959	8,774,903,000
1953	6,116,948	9,002,580,000	1,472	1,206,266	2,089,060,000	1,732	7,323,214	11,091,640,000
1954	5,558,897	8,218,094,000	1,478	1,042,174	1,660,019,000	1,593	6,601,071	9,878,113,000
1955	7,920,186	12,452,871,000	1,572	1,249,090	2,020,973,000	1,618	9,169,276	14,473,844,000
1956	5,816,109	9,754,973,000*	1,677	1,104,481	2,076,263,000*	1,880	6,920,590	11,831,236,000*

*—Partly estimated. †—Beginning with year 1937, standard equipment is included in the values reported.

A substantial part of trucks and buses reported comprises chassis only, without bodies; hence the value of bodies for these chassis is not included.

Federal excise taxes are excluded in all years. Table above includes sales of military vehicles.

5959 Lindsay Avenue, Detroit 4, Michigan

• PRODUCTION •

Monthly Motor Vehicle Factory Sales

From Plants Located in the United States

As reported by the Automobile Manufacturers Association

PASSENGER CARS

Month	1956	1955	1954	1953	1952	1951
Jan.	591,022	635,513	454,562	452,617	273,122	475,589
Feb.	560,924	677,705	446,676	485,270	333,224	505,865
Mar.	583,169	791,280	531,529	566,074	372,440	617,399
April	552,881	753,434	534,667	595,776	415,357	503,038
May	474,010	721,139	497,062	548,322	397,486	511,938
June	445,758	647,658	507,055	585,678	407,962	482,029
July	440,980	658,736	451,663	596,901	168,327	381,407
Aug.	417,020	620,610	445,306	512,730	218,577	426,932
Sept.	203,888	467,845	300,998	476,232	438,397	366,068
Oct.	352,140	505,177	221,195	528,814	471,808	415,255
Nov.	576,708	745,993	498,248	378,906	405,111	356,590
Dec.	617,599	695,096	669,936	389,628	418,983	293,325
Total	5,816,109	7,920,186	5,558,897	6,116,948	4,320,794	5,338,435

TRUCKS AND BUSES

Month	1956	1955	1954	1953	1952	1951
Jan.	89,224	89,866	96,572	111,853	102,288	128,244
Feb.	102,662	67,237	87,469	96,930	101,992	112,463
Mar.	106,813	103,317	101,474	134,365	110,533	137,626
April	101,452	128,406	97,102	126,899	114,228	136,231
May	96,476	128,254	91,500	93,810	106,431	140,789
June	92,294	119,524	91,821	74,453	110,748	135,656
July	81,038	109,885	78,753	105,998	43,455	110,909
Aug.	86,256	95,553	76,144	101,925	52,405	122,775
Sept.	71,667	92,117	68,944	98,399	112,762	109,934
Oct.	92,982	96,079	66,535	92,474	132,452	111,193
Nov.	90,479	114,855	89,537	74,081	114,425	93,678
Dec.	83,141	104,013	96,235	95,079	116,445	87,380
Total	1,104,481	1,249,106	1,042,684	1,206,266	1,218,165	1,426,828

TOTAL CARS, TRUCKS AND BUSES

Month	1956	1955	1954	1953	1952	1951
Jan.	680,253	725,379	551,134	564,470	375,410	606,833
Feb.	663,586	744,942	534,145	582,200	435,216	618,328
Mar.	689,982	894,597	633,003	700,439	482,973	755,025
April	654,333	881,840	631,769	722,675	529,585	639,269
May	570,486	849,393	588,562	642,132	503,917	652,727
June	538,052	767,182	598,876	660,131	518,710	617,685
July	522,018	768,621	530,416	702,899	211,782	492,316
Aug.	503,276	716,163	521,450	614,655	270,982	549,707
Sept.	275,555	559,962	369,942	574,631	551,159	476,002
Oct.	445,122	601,256	287,730	621,288	604,261	526,448
Nov.	667,187	860,848	587,785	452,987	519,536	450,268
Dec.	700,740	799,109	766,012	484,707	535,428	380,655
Total	6,920,590	9,160,292	6,600,981	7,323,214	5,538,959	6,765,263

Factory Sales to Domestic and Foreign Markets

Automobile Manufacturers Association

PASSENGER CARS

Year	Total	Domestic Market	Foreign Market	Per Cent Foreign
1944	610	308	302	49.5
1945	69,532	68,093	1,439	2.1
1946	2,148,699	2,004,649	144,050	6.7
1947	3,558,178	3,297,331	260,847	7.3
1948	3,909,270	3,676,093	233,177	6.0
1949	5,119,466	4,963,325	156,141	3.0
1950	6,665,863	6,512,938	152,926	2.3
1951	5,338,435	5,091,470	246,965	4.6
1952	4,320,794	4,153,746	167,048	3.9
1953	6,116,948	5,930,686	186,262	3.0
1954	5,558,897	5,352,253	206,644	3.7
1955	7,920,186	7,665,850	254,336	3.2
1956	5,816,109	5,623,401	192,708	3.3

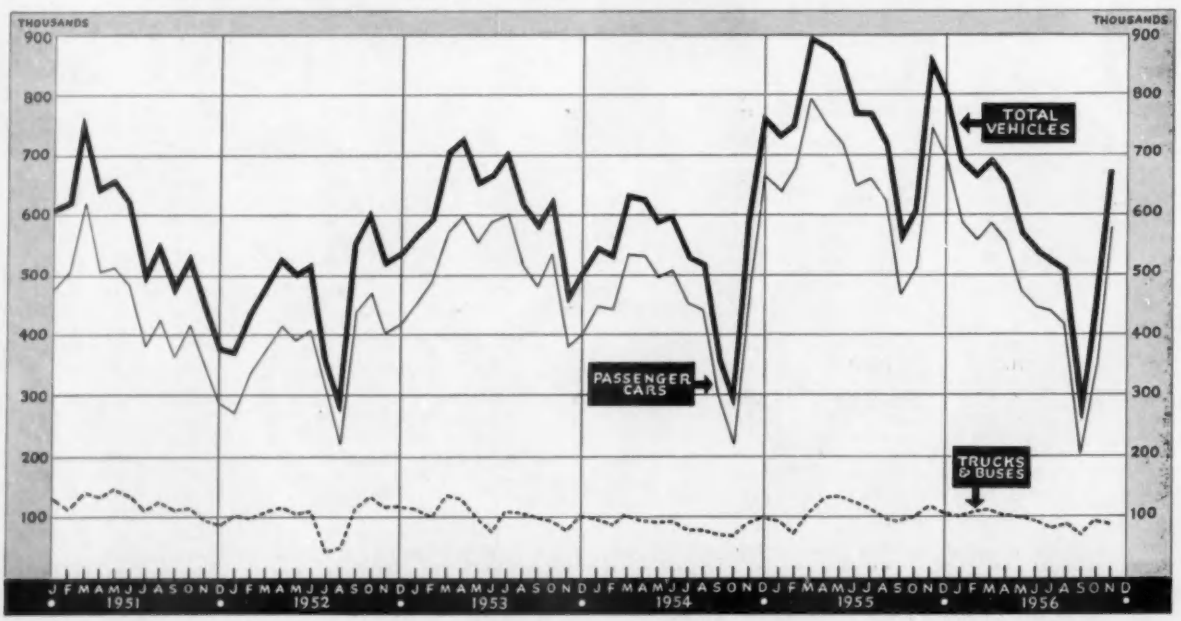
TRUCKS AND BUSES

Year	Total	Domestic Market	Foreign Market	Per Cent Foreign
1944	116,167	102,295	13,872	11.9
1945	291,469	254,039	37,430	12.8
1946	940,866	753,845	187,021	19.9
1947	1,239,443	987,954	251,489	20.3
1948	1,376,274	1,173,234	203,040	14.7
1949	1,134,185	1,002,551	131,634	11.6
1950	1,337,193	1,186,434	150,759	11.3
1951	1,426,828	1,203,244	223,584	15.7
1952	1,218,165	1,055,627	162,538	13.3
1953	1,206,266	1,067,325	138,941	11.6
1954	1,042,174	847,258	194,916	18.7
1955	1,249,106	1,056,403	192,703	15.4
1956	1,104,481	898,804	205,677	18.6

TOTAL MOTOR VEHICLES

Year	Total	Domestic Market	Foreign Market	Per Cent Foreign
1944	116,777	102,603	14,174	12.1
1945	361,101	323,132	38,869	10.7
1946	3,089,565	2,758,494	321,071	10.7
1947	4,797,621	4,285,285	512,336	10.7
1948	5,285,544	4,849,327	436,217	8.3
1949	6,253,651	5,965,876	287,775	4.6
1950	8,003,056	7,699,372	303,684	3.8
1951	6,765,263	6,294,714	470,549	6.9
1952	5,538,959	5,209,373	329,586	6.0
1953	7,323,214	6,998,011	325,203	4.4
1954	6,601,071	6,199,611	401,460	6.1
1955	9,169,292	8,722,253	447,039	4.9
1956	6,920,590	6,522,205	398,385	5.8

MONTHLY MOTOR VEHICLE FACTORY SALES FROM U. S. PLANTS


THOUSANDS
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TOTAL VEHICLES
PASSENGER CARS
TRUCKS & BUSES
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1951
1952
1953
1954
1955
1956

U. S. Passenger Car Production by Makes, by Years

As reported by the Automobile Manufacturers Association

Make	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Hudson	94,640	103,743	144,119	142,462	142,255	93,333	76,354	77,120	32,271	52,688	7,182
Nash	98,769	113,315	118,621	142,592	161,140	61,140	152,086	135,329	62,911	109,102	17,841
Rambler	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	79,162
Total—American Motors	**193,409**	**217,058**	**262,740**	**285,054**	**331,798**	**254,473**	**228,440**	**212,449**	**95,182**	**161,790**	**104,185**
Chrysler and Imperial	76,642	108,870	120,099	140,454	167,425	163,541	120,692	160,377	101,744	176,038	107,490
De Soto	62,368	82,323	93,369	107,174	127,430	120,757	97,585	129,959	69,844	131,753	104,395
Dodge	158,926	237,735	240,547	298,053	331,220	336,656	268,094	301,827	151,761	316,584	205,820
Plymouth	241,656	347,946	381,139	569,260	567,381	607,691	466,289	654,414	396,702	746,361	452,918
Total—Chrysler Corp.	**539,592**	**776,783**	**835,154**	**1,114,941**	**1,193,456**	**1,228,645**	**952,660**	**1,246,577**	**720,051**	**1,370,736**	**870,623**
Ford	372,917	601,665	549,077	841,170	1,187,122	900,770	777,531	1,184,187	1,394,762	1,764,524	1,373,542
Lincoln and Continental	13,946	29,275	43,688	33,132	35,485	25,386	31,992	41,962	35,733	41,226	48,995
Mercury	70,955	124,612	154,702	203,339	334,081	238,854	195,261	320,369	256,729	434,911	246,628
Total—Ford Motor Co.	**457,368**	**755,552**	**747,467**	**1,077,641**	**1,556,688**	**1,165,010**	**1,004,784**	**1,546,518**	**1,687,224**	**2,240,661**	**1,669,165**
Buick	156,080	267,830	275,503	398,482	552,827	404,695	321,048	485,353	531,463	781,296	535,364
Cadillac	28,444	59,436	66,209	81,545	110,535	103,272	96,844	103,538	123,746	153,334	140,873
Chevrolet	397,109	695,992	775,990	1,109,958	1,520,583	1,118,101	877,950	1,477,299	1,414,365	1,830,038	1,621,018
Oldsmobile	114,674	191,454	194,755	282,885	396,757	285,634	228,452	319,414	433,810	643,459	432,903
Pontiac	131,538	223,015	253,469	333,957	467,655	343,795	277,156	414,011	370,887	581,860	332,268
Total—General Motors Corp.	**827,845**	**1,437,727**	**1,565,926**	**2,206,827**	**3,048,357**	**2,255,497**	**1,801,450**	**2,799,615**	**2,874,271**	**3,989,987**	**3,062,426**
Packard	42,102	55,477	98,897	104,593	72,138	76,075	62,988	80,371	27,307	68,674	13,432
Studebaker	77,566	123,641	164,754	228,402	268,099	222,000	161,520	186,844	85,660	112,723	82,955
Total—Stude.-Packard Corp.	**119,668**	**179,118**	**263,651**	**332,995**	**340,237**	**298,075**	**224,508**	**267,215**	**112,967**	**181,397**	**96,387**
Kaiser	11,753	144,506	181,309	60,405	118,554	41,308	44,570	14,313	5,756	1,021	.....
Henry J.	.....	.....	.....	.....	30,947	58,228	30,543	7,459	.....	.....	.....
Willys	.....	.....	9,968	3,938	5,846	2,097	35,954	25,146	9,339	4,778	.....
Total—Willys Motors	**11,753**	**144,506**	**191,777**	**64,343**	**155,347**	**101,633**	**111,067**	**56,918**	**15,095**	**5,799**	.....
Checker Cab	.....	.....	4,458	1,465	2,715	3,085	694	2,974	2,627	7	3,970
Total—Passenger Cars	**2,149,635**	**3,510,744**	**3,871,173**	**5,083,266**	**6,628,598**	**5,306,418**	**4,323,603**	**6,132,266**	**5,507,417**	**7,950,377**	**5,806,756**

1956 U. S. Passenger Car Production, by Makes, by Months

As reported by the Automobile Manufacturers Association

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Hudson	1,460	875	950	621	24	393	24	3	1,119	880	374	459	7,182
Nash	3,414	2,356	2,921	1,588	24	734	36	3	1,293	2,651	1,373	1,443	17,841
Rambler	10,126	10,316	9,844	5,413	7,122	2,677	5,473	1,885	5,467	8,200	4,547	8,092	79,162
Total—America Motors	**15,000**	**13,547**	**13,715**	**7,622**	**7,170**	**3,804**	**5,533**	**1,891**	**7,884**	**11,731**	**6,294**	**9,994**	**104,185**
Chrysler & Imperial	13,211	11,393	11,220	9,907	9,864	9,158	9,963	4,719	74	3,604	10,413	13,964	107,490
DeSoto	11,716	10,566	10,493	9,224	7,143	7,899	6,851	7,337	323	6,115	13,377	13,351	104,395
Dodge	22,522	16,119	16,156	17,332	18,696	17,697	18,492	9,334	2,617	16,194	22,847	27,314	205,820
Plymouth	52,824	38,185	39,643	46,839	37,473	28,550	39,227	30,711	1,865	31,696	51,090	54,815	452,918
Total—Chrysler Motors	**100,273**	**76,263**	**77,512**	**83,302**	**73,176**	**63,304**	**74,533**	**52,101**	**4,879**	**57,609**	**97,727**	**109,944**	**870,623**
Ford	127,783	111,156	123,518	121,444	112,987	104,613	115,992	66,601	40,286	135,643	157,869	155,650	1,373,542
Lincoln & Continental	6,124	5,216	3,523	6,032	4,238	3,333	4,621	642	2,977	3,766	3,913	4,610	48,995
Mercury	22,937	21,516	19,395	29,924	24,425	20,684	25,072	20,321	2,730	9,783	22,043	27,798	246,628
Total—Ford Motor Co.	**156,844**	**137,888**	**146,436**	**157,400**	**141,650**	**128,630**	**145,685**	**87,564**	**45,993**	**149,192**	**183,825**	**188,058**	**1,669,165**
Buick	67,095	62,841	61,456	50,861	42,166	37,852	36,356	43,683	25,003	9,638	42,643	55,765	535,364
Cadillac	14,196	14,220	14,819	14,175	14,183	12,783	11,797	13,277	5,543	1,182	8,690	16,008	140,873
Chevrolet	151,678	152,664	164,088	158,743	127,471	124,248	117,952	139,903	56,182	127,630	160,989	139,470	1,621,018
Oldsmobile	50,166	50,447	48,919	38,330	33,011	31,368	31,074	35,249	25,482	9,222	37,586	42,949	432,903
Pontiac	38,236	38,208	27,962	29,500	24,747	22,929	21,235	26,084	19,471	12,886	33,417	27,593	332,268
Total—General Motors	**321,371**	**318,380**	**327,244**	**291,609**	**241,578**	**229,180**	**218,414**	**258,196**	**131,681**	**160,558**	**283,330**	**280,885**	**3,062,426**
Packard	3,967	292	3,038	2,072	2,205	1,679	36	0	0	0	0	143	13,432
Studebaker	14,352	9,787	7,443	6,159	5,219	3,584	4,727	2,883	639	10,278	9,818	8,066	82,955
Total—Stude.-Pack. Corp.	**18,319**	**10,079**	**10,481**	**8,231**	**7,424**	**5,263**	**4,763**	**2,883**	**639**	**10,278**	**9,818**	**8,209**	**96,387**
Checker Cab	29	93	296	439	403	428	444	311	394	412	394	327	2,970
Total Passenger Cars	**611,836**	**556,250**	**575,684**	**548,603**	**471,401**	**430,609**	**449,372**	**402,946**	**191,470**	**389,780**	**581,388**	**597,417**	**5,806,756**

• PRODUCTION •

Passenger Car Production by Manufacturing Groups

Shown in Per Cent of Total Car Production

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
American Motors Corp.	9.00	6.18	6.79	5.61	5.01	4.80	5.28	3.46	1.73	2.03	1.79
Chrysler Corp.	25.10	22.13	21.57	21.93	18.00	23.15	22.03	20.33	13.07	17.24	14.99
Total—Accumulative	34.10	28.31	28.36	27.54	23.01	27.95	27.31	23.79	14.80	19.27	16.78
Ford Motor Co.	21.28	21.52	19.31	21.20	23.48	21.95	23.24	25.22	30.64	28.18	28.76
Total—Accumulative	55.38	49.83	47.67	48.74	46.49	49.90	50.55	49.01	45.44	47.45	45.53
General Motors Corp.	38.51	40.95	40.45	43.41	45.99	42.51	41.67	45.65	52.19	50.19	52.75
Total—Accumulative	93.89	90.78	88.12	92.15	92.48	92.41	92.22	94.66	97.63	97.64	98.28
Studebaker-Packard Corp.	5.57	5.10	6.81	6.55	5.14	5.62	5.19	4.36	2.05	2.28	1.66
Total—Accumulative	99.46	95.88	94.93	98.70	97.62	98.03	97.41	99.02	99.68	99.92	99.94
Willys Motors Corp.	.54	4.12	4.95	1.27	2.34	1.92	2.57	.93	.27	.08	....
Total—Accumulative	100.00	100.00	99.88	99.97	99.96	99.95	99.98	99.95	99.95	100.00	99.94
Checker Cab	....	....	.12	.03	.04	.05	.02	.05	.05	....	.06
Total—All Groups	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Passenger Car Factory Sales by Body Types

As reported by the Automobile Manufacturers Association

	1956		1955		1954		1953	
Body Types	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total
4-Door Sedans*	2,013,563	34.63	3,043,564	38.43	2,592,841	46.64	2,078,616	50.34
2-Door Sedans, Coaches, Coupes	1,124,854	19.35	1,677,430	21.18	1,476,989	26.57	1,694,638	27.70
Business Coupes	10,719	0.18	13,408	0.17	16,510	0.30	36,974	0.60
Convertibles	198,962	3.42	239,790	3.03	155,667	2.80	158,962	2.60
Hard Tops—2 Door	1,060,541	18.23	1,666,984	21.05	954,519	17.17	841,982	13.76
Hard Tops—4 Door	754,926	12.98	501,814	6.34				
Station Wagons—2 Door‡	169,508	2.91	504,428	6.37	349,450	6.29	297,393	4.86
Station Wagons—4 Door‡	469,000	8.06	254,994	3.22				
Chassis**	14,036	0.24	17,774	0.21	12,921	0.23	8,383	0.14
Total	5,816,109	100.00	7,920,186	100.00	5,558,897	100.00	6,116,948	100.00

*—Includes taxicabs and chassis sold for taxicabs. ‡—Includes only station wagons produced on passenger car chassis.
**—Includes miscellaneous body types on passenger car chassis.

Factory Sales of Special Types of Vehicles*

As reported by the Automobile Manufacturers Association

Type of Vehicle	1956	1955	1954	1953	1952	1951	1950
Station Wagons[1]	656,696	780,151	364,234	318,178	189,651	195,740	159,944
Motor Coaches[2]	4,064	4,023	4,118	4,057	5,375	9,460	4,908
School Bus Chassis[2]	22,714	26,535	23,465	21,284	19,452	31,891	19,953
Trucks with Cab-over-Engine	44,812	45,815	26,268	24,712	19,592	25,482	22,370
Trucks with Diesel Engines	25,797	16,876	10,546	10,872	13,165	16,494	13,903
Trucks with LPG Engines	2,311	....	....	....	....	....	....
Trucks with 6 wheels, 3 axles	33,920	26,060	16,364	14,364	15,585	....	15,719
Multi-Stop Trucks	26,736	23,853	19,507	19,246	18,493	28,867	21,681
Ambulances and Funeral Vehicles	2,281	2,661	2,880	3,034	2,662	4,177	2,971

[1]—Includes station wagons built on both passenger car and truck chassis. [2]—Including integral school buses. [3]—Does not represent actual school bus production, because a considerable number of chassis are used for other purposes.
*—These data are included in the factory sales of cars and trucks shown on previous pages.

1956 U. S. Motor Truck Production, by Makes, by Months

As reported by the Automobile Manufacturers Association

Makes	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Available	25	25	42	50	35	38	17	32	30	28	19	20	361
Chevrolet	36,519	35,481	34,589	32,984	29,161	27,569	25,617	30,952	11,363	30,788	30,012	28,475	353,510
G.M.C.	8,039	9,151	10,330	8,568	8,268	7,081	6,208	7,042	4,860	7,788	7,609	6,541	91,485
Diamond T	408	397	452	415	451	426	453	474	442	496	371	275	5,061
Divco	421	394	345	336	353	330	178	272	228	236	196	281	3,570
Dodge & Fargo	7,029	7,500	7,721	7,642	8,404	7,412	8,191	8,511	3,743	9,367	8,338	7,658	91,516
Ford	29,230	25,735	28,172	26,307	26,533	4,742	4,688	4,131	5,470	6,473	6,571	6,427	64,883
Four Wheel Drive	109	258	228	134	156	86	72	140	94	113	143	112	1,645
International	13,043	12,805	12,840	12,398	11,929	10,341	9,489	10,768	9,856	10,808	10,957	12,606	137,840
Mack	1,668	1,634	1,539	1,654	1,652	1,512	1,370	1,567	1,382	1,452	1,417	1,457	18,304
Reo	331	306	301	316	338	351	320	378	301	364	280	203	3,789
Studebaker	1,585	1,027	991	1,320	1,321	1,103	1,601	1,944	0	950	1,536	1,334	15,222
White	1,764	1,740	1,573	1,551	1,631	1,558	1,013	1,444	1,163	1,541	1,249	1,132	17,359
Willys	5,674	5,353	5,658	4,340	5,356	4,742	4,688	4,131	5,470	6,473	6,571	6,427	64,883
Other Trucks	529	450	592	485	520	693	457	672	522	403	308	307	5,943
Total—Trucks	106,374	102,256	105,373	99,010	96,108	88,070	84,649	90,846	61,798	95,685	92,845	84,782	1,107,796
Total—Buses	344	264	452	371	442	408	372	427	293	294	226	307	4,206
Total—Trucks and Buses	611,836	556,250	575,684	548,603	471,401	430,609	449,372	402,946	191,470	389,780	581,388	597,417	5,806,756
Total Motor Vehicles	718,554	658,770	681,515	647,984	567,951	519,087	534,303	494,219	253,561	485,759	674,459	682,506	6,918,758

1956 Motor Truck Factory Sales by Gross Vehicle Weights

From data supplied by the Automobile Manufacturers Association

TOTAL SALES FROM U. S. PLANTS

G.V.W.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
5,000 lb. and less.	43,550	43,600	42,540	38,367	34,225	36,178	29,113	33,871	27,258	37,896	38,807	33,271	438,676
5,001-10,000 lb. ..	16,284	17,653	18,917	19,218	20,457	18,800	16,012	16,266	12,948	19,013	20,400	18,433	209,401
10,001-14,000 lb. .	3,307	3,665	3,941	3,875	3,645	3,852	2,948	3,386	2,571	3,286	2,856	2,586	39,918
14,001-16,000 lb. .	19,268	18,989	18,993	18,056	16,643	17,909	15,796	15,139	12,905	15,094	11,580	11,785	192,157
16,001-19,500 lb. .	4,720	6,319	8,010	7,633	7,907	7,764	7,431	7,210	5,674	6,422	6,962	6,441	82,493
19,501-26,000 lb. .	5,224	5,342	6,066	5,862	5,398	4,868	3,760	4,307	3,601	3,985	3,333	4,246	56,492
Over 26,000 lb....	6,615	6,816	7,912	8,070	7,839	7,420	5,671	5,648	6,342	6,988	5,808	6,151	81,280
Total	98,968	102,384	106,379	101,081	96,114	91,791	80,731	85,827	71,299	92,684	90,246	82,913	1,100,417

FACTORY SALES FOR DOMESTIC MARKET

G.V.W.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
5,000 lb. and less.	38,771	37,350	36,396	32,777	28,572	29,954	23,443	29,338	22,343	32,914	33,203	28,175	373,236
5,001-10,000 lb. ..	12,978	14,123	14,973	14,758	15,919	10,910	12,279	12,371	10,679	16,428	17,664	15,367	168,449
10,001-14,000 lb. .	2,896	3,139	3,397	3,240	3,070	3,168	2,423	2,682	2,197	2,735	2,378	1,880	33,205
14,001-16,000 lb. .	15,309	14,443	14,541	14,385	12,629	13,131	12,354	12,019	9,894	11,539	8,765	7,016	146,025
16,001-19,500 lb. .	3,289	4,326	5,528	5,251	5,720	5,513	4,669	4,355	3,548	4,817	4,812	4,863	56,691
19,501-26,000 lb. .	4,658	4,364	5,250	4,950	4,642	4,093	3,118	3,296	2,936	3,222	3,142	3,448	47,159
Over 26,000 lb....	5,851	6,007	6,911	7,039	7,041	6,694	4,758	4,748	5,255	5,878	4,906	5,334	70,422
Total	83,752	83,752	86,996	82,400	77,593	73,463	63,044	68,809	56,852	77,533	74,870	66,123	895,187

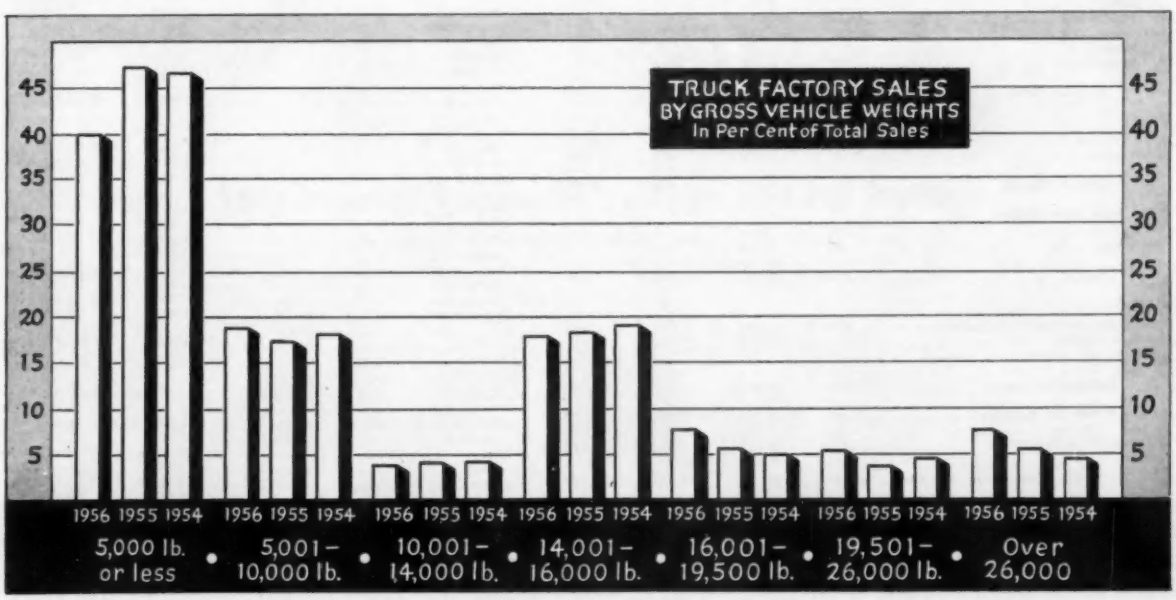
FACTORY SALES FOR EXPORT

G.V.W.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
5,000 lb. and less.	4,779	6,250	6,144	5,590	5,653	6,224	5,670	4,533	4,915	4,982	5,604	5,096	65,440
5,001-10,000 lb. ..	3,306	3,530	3,944	4,460	4,538	2,890	3,733	3,895	2,269	2,585	2,736	3,066	40,952
10,001-14,000 lb. .	411	526	544	635	575	684	525	704	374	551	478	706	6,713
14,001-16,000 lb. .	3,959	4,546	4,452	3,671	4,014	4,778	3,442	3,120	3,011	3,555	2,815	4,769	46,132
16,001-19,500 lb. .	1,431	1,993	2,482	2,382	2,187	2,251	2,762	2,855	2,126	1,605	2,150	1,578	25,802
19,501-26,000 lb. .	566	978	816	912	756	775	642	1,011	665	763	691	758	9,333
Over 26,000 lb....	764	809	1,001	1,031	798	726	913	900	1,087	1,110	902	817	10,858
Total	15,216	18,632	19,383	18,681	18,521	18,328	17,687	17,018	14,447	15,151	15,376	16,790	205,230

Annual Motor Truck Factory Sales by G.V.W., 1948-1956

From data supplied by the Automobile Manufacturers Association

	5,000 lb. & Less		5,001-10,000 lb.		10,001-14,000 lb.		14,001-16,000 lb.		16,001-19,500 lb.		19,501-26,000 lb.		Over 26,000 lb.		Total	
Year	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total
1956....	438,676	39.9	209,401	19.0	39,918	3.6	192,157	17.5	82,493	7.5	56,492	5.1	81,280	7.4	1,100,417	100
1955....	585,886	47.0	212,571	17.1	46,905	3.8	225,755	18.1	65,717	5.3	43,422	3.5	64,827	5.2	1,245,083	100
1954....	482,515	46.5	186,733	18.0	39,073	3.8	195,121	18.8	48,560	4.7	45,111	4.3	40,943	3.9	1,038,056	100
1953....	563,112	46.8	221,817	18.5	46,624	3.9	185,115	15.4	49,628	4.1	86,773	7.2	49,140	4.1	1,202,209	100
1952....	505,316	41.7	234,563	19.3	56,308	4.6	219,284	18.1	45,617	3.8	105,451	8.7	46,246	3.8	1,212,790	100
1951....	587,649	41.5	260,360	18.4	99,140	7.0	278,103	19.5	68,599	4.9	81,066	5.7	42,151	3.0	1,417,368	100
1950....	627,405	47.1	266,042	20.0	89,156	6.7	219,918	16.5	53,484	4.0	47,029	3.5	29,250	2.2	1,332,285	100
1949....	513,148	45.5	279,359	24.8	84,605	13.4	173,137	15.3	37,233	3.3	23,801	2.1	17,391	1.5	1,128,674	100
1948....	485,088	35.6	267,720	19.6	182,500	13.4	280,535	20.6	76,711	5.6	50,021	3.7	21,400	1.5	1,363,975	100



Total Motor Vehicles	718,554	658,770	681,515	647,984	567,951	519,087	534,303	494,210	253,561	485,759	674,459	682,506	6,918,758

• PRODUCTION •

Motor Bus Factory Sales—by Type of Bus

Does not include Nonintegral School Buses.

As reported by the Automobile Manufacturers Association

Year	U. S. Domestic Market: City Type	Inter-city Type	Special Type†	Total Domestic Market	Total Export Market	Factory Sales: Total	Factory Sales: Wholesale Value	Average Wholesale Value
1956	2,385	834	398	3,617	447	4,064	$75,836,000	$18,660
1955	2,317	916	366	3,599	424	4,023	74,207,000	18,446
1954	2,407	834	541	3,782	336	4,118	71,973,000	17,478
1953	2,390	855	586	3,731	326	4,057	68,371,000	16,858
1952	1,997	691	1,823	4,511	864	5,375	77,339,000	14,389
1951	4,754	1,233	2,797	8,784	676	9,460	135,650,000	14,339
1950	2,743	581	683	4,012	896	4,908	66,248,000	13,498
1949	3,402	690	802	4,894	617	5,511	72,945,000	13,236
1948	6,971	2,558	997	10,526	1,773	12,299	178,381,000	14,504
1947	11,799	3,451	1,400	16,650	2,460	19,110	224,519,000	11,749

†Includes Integral School buses.

Revenue Motor Bus Factory Sales

From Plants Located in the United States

As reported by the Automobile Manufacturers Association

Month	1956	1955	1954	1953	1952
January	253	190	405	254	778
February	278	176	328	190	625
March	434	325	348	236	569
April	371	519	379	145	597
May	362	313	323	367	423
June	503	309	351	380	484
July	307	296	245	376	224
August	429	434	309	447	349
September	368	223	326	348	387
October	298	469	372	519	389
November	233	359	305	371	319
December	228	410	427	424	231
Total	4,064	4,023	4,118	4,057	5,375

Factory Sales of Buses with Diesel Engines

As reported by the Automobile Manufacturers Assn.

Year	Domestic Market	Export Market	Total
1955	2,938	395	3,333
1954	2,543	289	2,832
1953	2,516	216	2,732
1952	1,984	687	2,671
1951	3,559	465	4,024
1950	1,992	363	2,355
1949	2,232	352	2,584
1948	5,108	1,194	6,302
1947	4,395	717	5,112

Truck Trailer Shipments by Type

As reported by Industry Division, Bureau of the Census

Type of Trailer	1956	1955	1954	1953
Vans				
Insulated and refrigerated	5,139	5,203	4,250	4,077
Steel	1,047	1,117	831	890
Aluminum	4,092	4,086	3,419	3,187
Furniture	2,135	1,943	1,141	1,468
Aluminum	2,135	1,732	1,061	1,345
Steel		211	80	123
All other closed-top vans	26,070	34,337	18,155	22,236
Steel	11,582	10,865	6,733	11,663
Aluminum	14,488	23,522	11,422	10,573
Open-top vans	3,759	4,565	2,186	3,869
Steel	1,781	2,062	1,070	1,760
Aluminum	1,978	2,503	1,116	2,109
Total—Vans	37,103	46,098	25,732	31,650
Tanks				
Petroleum	5,373	5,026	5,433	3,879
All other†	1,128	686	654	830
Total—Tanks	6,501	5,712	6,087	4,709
Pole, pipe and logging				
Single axle	586	789	599	593
Tandem axle	1,273	1,372	797	997
Total	1,859	2,161	1,396	1,590
Platforms				
Racks, livestock and stake	994	1,300	888	4,104
Grain bodies	1,289	1,016	785	905
Flats, all types	8,479	8,328	5,333	9,111
Total—Platforms	10,762	10,644	7,006	14,120
Low-bed heavy haulers	2,994	2,931	3,090	5,415
Dump trailers	1,839	2,128	996	1,018
All other trailers**	2,743	4,034	7,936	34,891
Total—Complete Trailers	63,801	73,708	52,243	93,393
Trailer chassis	3,660	2,760	2,294	3,306
Total—Trailers and Chassis	67,461	76,468	54,537	96,699

†—Includes Food and L.P.G. trailers. **—Includes off-highway, auto transport, public utility trailers and converter dollies.

Truck Trailer Shipments by Months

In Units and Their Value

As reported by the Industry Division, Bureau of the Census

1956	Shipments	Value
January	4,781	$ 23,001,000
February	4,804	23,582,000
March	6,564	31,043,000
April	6,874	33,619,000
May	7,098	34,857,000
June	6,959	34,433,000
July	4,962	24,274,000
August	5,630	27,455,000
September	4,902	23,779,000
October	5,469	26,318,000
November	4,890	23,676,000
December	4,528	22,308,000
Total	67,461	$328,345,000
1955		
January	4,458	$ 21,435,000
February	4,942	23,370,000
March	6,337	29,887,000
April	6,363	29,846,000
May	6,273	29,572,000
June	6,957	33,072,000
July	5,897	28,809,000
August	7,079	35,115,000
September	7,087	35,658,000
October	6,990	35,278,000
November	7,017	34,435,000
December	7,068	34,936,000
Total	76,468	$371,413,000
1954		
January	4,671	$ 17,074,000
February	4,223	17,163,000
March	4,858	19,716,000
April	4,466	18,831,000
May	4,537	18,528,000
June	5,080	21,680,000
July	4,168	21,114,000
August	4,076	20,277,000
September	4,141	20,218,000
October	4,617	23,496,000
November	4,932	24,152,000
December	4,768	22,978,000
Total	54,537	$245,227,000

Tractor Shipments by Years

In Units and Their Value

As reported by the Industry Division, Bureau of the Census

Year	TOTAL SHIPMENTS Number	Value (Add 000)	Average Value per Tractor
WHEEL TYPE			
1956	222,947	$391,197	$ 1,755
1955	324,916	517,892	1,594
1954	249,264	380,115	1,525
1953	390,366	590,322	1,512
1952	413,151	555,829	1,345
CONTRACTORS' OFF-HIGHWAY TYPE			
1956	5,213	$ 92,608	$17,765
1955	4,021	62,658	15,583
1954	3,019	46,801	15,502
1953	2,944	43,681	14,837
1952	4,026	59,847	14,865
TRACKLAYING TYPE			
1956	54,794	$468,217	$ 8,545
1955	48,684	357,112	7,335
1954	40,374	267,918	6,636
1953	50,597	328,696	6,496
1952	48,155	280,841	5,832
TOTAL—ALL TYPES			
1956	282,954	$952,022	....
1955	377,621	937,662	....
1954	292,657	694,834	....
1953	443,907	962,699	....
1952	465,332	896,517	....

Value of 1956 Tractor Shipments

As reported by the Industry Division, Bureau of the Census

Month	Type: Wheel	Tracklaying	Total Value
January	$44,026,000	$35,349,000	$79,375,000
February	42,795,000	36,731,000	79,526,000
March	44,244,000	42,523,000	86,767,000
April	42,996,000	49,798,000	92,794,000
May	34,054,000	47,292,000	81,346,000
June	27,042,000	44,807,000	71,849,000
July	20,840,000	36,443,000	57,283,000
August	24,556,000	38,765,000	63,321,000
September	29,656,000	33,575,000	63,231,000
October	27,619,000	35,703,000	63,322,000
November	22,731,000	32,740,000	55,471,000
December	29,689,000	33,967,000	63,656,000
Total	$390,248,000	$467,693,000	$857,941,000

Garden Tractor Shipments and Their Value

As reported by the Industry Division, Bureau of the Census

Type and Hp	1954 Units	1954 Value (Add 000)	1953 Units	1953 Value (Add 000)	1952 Units	1952 Value (Add 000)
Garden Tractors:						
Riding Type						
Under 6 engine hp..	2,665	$680	2,563	$734	1,330	$432
6 to 8 engine hp...	2,996	1,020	3,083	1,168	4,174	1,495
8 engine hp and over	1,390	635				
Total	7,051	$2,335	5,646	$1,902	5,504	$1,927
Walking Type						
2 engine hp and less	35,607	3,629	48,418	4,568	57,679	6,049
Over 2 engine hp...	73,475	11,610	89,812	13,488	97,811	15,033
Total	109,0f2	$15,239	138,230	$18,056	155,490	$21,082
Motor Tillers						
2 engine hp and less	51,949	4,699	41,756	4,741	37,245	4,382
Over 2 engine hp...	23,133	2,834	26,166	4,570	4,253	707
Total	75,082	$7,533	67,922	$9,311	41,498	$5,089
Total—Garden Tractors.	191,215	$25,107	211,798	$29,269	202,492	$28,098

1956 Production of Tractors by Type of Fuel

As reported by Industry Division, Bureau of the Census

	Wheel Type: Gasoline	Diesel	LPG	Total	Tracklaying Type: Gasoline	Diesel	Total
January	22,895	3,365	1,246	27,506	809	3,420	4,229
February	23,354	2,566	1,043	26,963	869	3,493	4,362
March	22,179	3,668	1,004	26,851	1,037	3,936	4,973
April	22,171	2,422	1,053	25,646	1,183	4,063	5,246
May	16,770	2,508	1,009	20,287	1,146	4,682	5,828
June	11,840	2,288	704	14,832	1,250	4,360	5,610
July	7,928	1,072	541	9,541	580	3,452	4,032
August	7,983	2,090	826	10,899	916	3,283	4,199
September	13,101	2,039	844	15,984	907	3,599	4,506
October	8,783	1,330	659	10,772	893	3,812	4,705
November	10,403	1,695	868	12,966	1,257	3,766	5,022
December	11,737	1,812	937	14,486	1,167	3,493	4,660
Total	179,144	26,855	10,734	216,733	12,014	45,359	57,372
Percent of Total	82.66	12.39	4.95	100.00	20.94	79.06	100.00

Shipments of Lawn Mowers

In Units and Their Value

Type	1954 Units	1954 Value	1947 Units	1947 Value
Lawn Mowers				
Hand (reel type)	973,454	$14,196,000	2,209,126	$30,365,000
Power:				
Reel type	492,241	38,193,000	242,093	24,632,000
Rotary type	1,309,864	71,576,000	120,241	11,891,000
Gang (cutting units)	12,409	1,513,000	21,239	2,162,000
Other	.....	9,293,000	20,889	2,003,000
Lawn mowers, incl. parts, n.e.c.	....	3,648,000	.....	.....
Total—Lawn Mowers	.....	$138,419,000	.....	$71,053,000

1956 Tractor Shipments by Type and Hp Ratings

As reported by the Industry Division, Bureau of the Census

Hp Rating	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
BELT HP.					**WHEEL TYPE***								
9-29 hp	3,745	3,125	3,140	2,697	1,672	1,758	1,277	1,655	1,736	1,472	1,761	2,188	26,235
30-34 hp	6,239	6,492	7,472	5,474	5,623	4,591	2,648	3,399	3,883	3,459	2,094	2,840	54,214
35-39 hp	2,649	2,315	2,371	3,495	2,272	1,949	2,616	2,038	2,410	2,302	1,582	1,664	27,663
40-49 hp	9,847	8,926	8,800	7,748	5,660	4,022	3,052	4,419	5,016	3,327	3,279	4,719	68,815
50-54 hp	2,958	3,325	3,291	3,788	2,791	2,643	1,279	1,223	1,486	1,268	921	1,099	26,072
55 hp and over	1,345	1,255	1,312	1,523	1,545	905	797	1,240	2,069	2,587	2,015	2,997	19,590
Total—Wheel Type	26,792	25,438	26,386	24,725	19,563	15,868	11,669	13,974	16,600	14,415	11,652	15,507	222,589
DRAWBAR HP.					**TRACKLAYING TYPE**								
Under 35 hp	788	954	1,151	1,159	1,008	1,231	736	852	844	932	1,081	1,130	11,868
35-49 hp	1,440	1,644	1,609	1,569	1,577	1,500	1,156	1,151	1,079	840	874	814	15,253
50-79 hp	739	810	1,262	1,505	1,333	1,419	1,155	1,156	1,154	1,237	780	824	13,374
80 hp and over	1,261	1,128	1,217	1,625	1,432	1,260	1,129	1,175	915	1,079	927	1,034	14,182
Total—Track Type	4,229	4,536	5,239	5,858	5,350	5,410	4,176	4,334	3,992	4,088	3,662	3,802	54,676
Total—Tractors	31,021	29,974	31,625	30,583	24,913	21,278	15,845	18,308	20,592	18,503	15,314	19,309	277,265

*Does not include contractors' off-highway type.

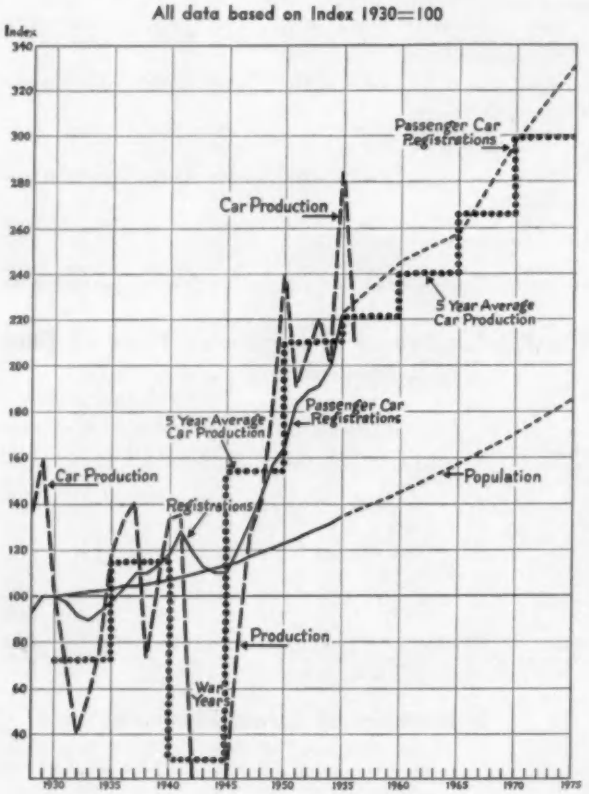
transport, public utility trailers and converter dollies.

• PRODUCTION •

Looking Ahead to 1975

Increases in Population, Car Production and Registrations

All data based on Index 1930=100



Forecast of Passenger Car Registrations

In 1960, 1965, 1970, 1975

Year	Estimated Population July 1	Estimated Passenger Car Registrations Dec. 31	Population per Registered Passenger Car
1955.....	165,200,000	51,000,000	3.24
1960.....	179,400,000	56,400,000	3.18
1965.....	193,300,000	62,000,000	3.12
1970.....	209,400,000	68,400,000	3.06
1975.....	228,500,000	76,200,000	3.00

Estimated Annual Growth in Passenger Car Registrations

By 5 Year Periods, 1955 to 1975

Period	Increase in Car Registrations: Total for Five Year Period	Annual Increment
1955 to 1960.....	5,400,000	1,080,000
1960 to 1965.....	5,600,000	1,112,000
1965 to 1970.....	6,400,000	1,280,000
1970 to 1975.....	7,800,000	1,560,000

Estimated Annual Passenger Car Production

Average Production by 5 Year Periods, 1955 to 1975

Assuming 11 Year Car Life

Period	Passenger Car Production for: Annual Growth	Replacement Market	Export	Total
1955 to 1960...	1,080,000	4,880,000	200,000	6,160,000
1960 to 1965...	1,120,000	5,380,000	200,000	6,700,000
1965 to 1970...	1,280,000	5,930,000	200,000	7,410,000
1970 to 1975...	1,560,000	6,570,000	200,000	8,330,000

Chart and tables shown above were abstracted from a paper prepared by Joseph Geschelin, Detroit Editor of Automotive Industries.

1956 Model Year Factory Installations of Passenger Car Optional Equipment

Shown as Per Cent of Each Car's Production

Based on Survey by Automotive Industries

	Ford	Lincoln	Merc.	Plym.	Chrys.*	De Soto	Dodge	Cad.	Olds.	Buick	Chev.	Pont.	AMC	Stud.	Packard
Automatic Trans.	62.0	STD	88.9	61.7	99.6	98.6	90.3	STD	98.6	96.5	60.5	93.1	60.9	54.9	99.0
Standard Trans.	30.0	NA	8.1	35.0	0.4	1.1	8.3	NA	1.4	3.5	36.0	6.9	20.5	10.2	0.1
Overdrive Trans.	8.0	NA	3.0	3.3	0	0.3	1.4	NA	NA	NA	3.5	NA	18.5	34.9	0.9
Power Brakes	2.7**	98.4	32.0	6.0	74.9	67.4	17.6	STD	70.1	45.6	6.3	33.0	61.6	7.4	93.6
Power Steering	19.0	100.0	27.9	6.1	90.6	74.6	22.5	STD	59.7	51.9	7.3	27.5	7.5	13.1	68.0
Power Seats	1.0	85.1	6.1	0.6	22.1	11.0	2.4	65.0	18.8	13.7	0.4	2.4	0	.7	30.3
Power Windows	1.0	86.7	3.8	0.6	18.9	7.4	2.3	76.0	17.5	12.1	0.5	2.4	1.0	1.5	27.0
Radios	65.0	98.9	84.6	34.3	84.7	67.3	47.2	98.0	90.7	87.6	66.5	85.8	55.0	40.7	92.0
Heaters	89.0	99.7	96.0	93.8	98.2	97.4	94.8	97.0	98.0	98.1	94.2	96.7	95.1	90.4	96.3
White Walls	50.0	98.8	78.4	44.9	84.4	78.4	60.2	98.0	80.9	80.8	40.6	77.4	54.0	60.8	85.7
Air Conditoning	1.4**	16.2	1.1	0.2	6.8	2.5	0.7	26.0	4.7	3.7	0.9	2.4	6.7	0.5	4.3
Tinted Glass	22.0	94.0	51.0	19.2	61.7	50.7	23.7	91.0	44.1	62.8	16.2	25.4	39.7	25.0	54.5
Windshield Washers	43.0	STD	49.3	19.7	86.4	49.5	21.4	STD	78.0	71.7	24.0	25.2	23.0	20.5	STD
Backup Lights	29.0	STD	88.0	28.9	94.4	STD	62.6	STD	60.3	81.6	37.0	86.9	58.2	40.3	STD
V-8	89.0	STD	STD	63.7	STD	STD	87.9	STD	STD	STD	57.6	STD	13.2	70.5	STD
Directional Signals	STD	STD	100.0	96.9	STD	STD	100.0	STD	STD	STD	STD	STD	STD	98.0	STD

*—Includes Imperial. **—Dealer Installations.

CANADIAN STATISTICS

From Canadian Automobile Chamber of Commerce

Motor Vehicle Production in Canada

In Units and Their Value

	PASSENGER CARS			TRUCKS AND BUSES			TOTAL	
Year	Number of Units†	Wholesale Value	Average Wholesale Value	Number of Units†	Wholesale Value	Average Wholesale Value	Number of Units	Wholesale Value
1925	135,573	$ 86,158,773	$ 635	26,397	$ 12,234,486	$ 463	161,970	$ 98,393,259
1926	166,887	106,000,203	635	37,840	16,629,334	439	204,727	122,629,537
1927	146,421	100,962,211	689	32,633	14,942,017	458	179,054	115,904,228
1928	197,848	127,263,877	643	44,206	21,913,122	'496	242,054	149,176,999
1929	203,307	134,023,280	659	59,318	29,474,395	497	262,625	163,497,675
1930	121,337	75,253,581	620	32,035	16,513,225	515	153,372	91,766,806
1931	65,072	42,634,173	655	17,487	10,330,763	591	82,559	52,964,936
1932	50,694	32,490,139	641	10,095	6,070,667	601	60,789	38,560,796
1933	53,849	32,568,268	605	12,003	6,062,195	505	65,852	38,630,463
1934	92,647	57,260,156	618	24,205	12,770,318	528	116,852	70,030,474
1935	135,562	79,208,276	584	37,315	19,803,771	531	172,877	99,013,047
1936	128,369	76,814,258	598	33,790	19,140,946	566	162,159	95,955,204
1937	153,946	93,368,282	610	54,417	30,389,011	558	207,463	123,757,293
1938	123,761	81,661,687	660	42,325	26,497,038	626	166,086	108,158,725
1939	108,369	71,101,304	656	47,057	28,072,712	597	155,426	99,173,916
1940	109,911	83,544,445	760	113,102	91,191,516	'806	223,013	174,735,961
1941	96,603	81,167,694	840	173,588	163,414,252	941	270,191	244,581,947
1942	12,236	10,305,013	842	216,057	229,103,128	1,060	228,293	239,408,741
1943	.....	.....	....	178,064	222,393,092	1,249	178,064	222,393,092
1944	.....	.....	....	158,038	213,259,582	1,349	158,038	213,259,582
1945	1,868	1,638,118	877	130,777	167,103,012	1,278	132,645	168,741,130
1946	91,871	82,847,330	902	79,657	81,204,338	1,019	171,528	164,051,668
1947	167,257	182,161,183	1,089	90,758	116,357,486	1,282	258,015	298,518,669
1948	166,819	210,799,512	1,264	96,941	137,228,722	1,415	263,760	348,028,234
1949	193,556	277,660,998	1,434	99,028	146,697,354	1,481	292,584	424,358,352
1950	284,076	447,029,182	1,574	106,026	163,942,858	1,546	390,102	610,972,040
1951	282,714	438,613,532	1,551	132,706	212,806,695	1,604	415,420	651,420,227
1952	283,534	417,654,448	1,472	150,176	253,247,296	1,680	433,710	670,901,744
1953	360,385	539,524,001	1,497	120,574	199,082,949	1,651	480,959	738,606,950
1954	287,191	436,828,440	1,521	69,892	122,291,809	1,750	359,083	559,112,249
1955	374,761	610,683,424	1,630	78,862	143,455,714	1,819	453,623	754,139,138
1956	374,126	.....	....	96,548	.....	....	470,674	875,000,000

†—Production figures include all wheeled vehicles for military use. Universal carriers and scout cars are not included.

Canadian Motor Vehicle Production by Months

Month	1956	1955	1954	1953	1952	1951	1950	1949	1948
January	29,703	29,403	40,310	35,894	24,232	39,204	28,527	13,863	16,715
February	29,222	31,827	44,268	42,904	32,448	40,592	30,137	17,197	16,382
March	47,533	32,380	45,634	51,990	34,209	47,779	30,051	25,566	27,112
April	60,374	66,944	45,622	52,420	46,908	41,060	26,386	26,685	24,243
May	58,618	60,882	37,284	50,590	42,690	42,911	35,281	26,708	21,368
June	52,708	56,685	30,229	49,900	41,110	36,229	41,383	30,096	23,362
July	47,890	48,067	26,128	48,691	34,314	30,294	40,131	25,382	15,106
August	18,251	25,014	17,249	22,640	22,853	21,833	24,272	20,475	16,959
September	11,787	19,077	13,982	35,021	41,065	29,861	38,035	30,894	23,775
October	30,420	26,299	10,624	35,398	41,659	32,462	35,573	28,125	25,057
November	44,538	28,860	18,176	19,931	31,340	29,461	30,322	19,721	26,794
December	43,228	28,185	27,577	35,080	30,882	23,734	30,004	27,871	26,388
Total	474,272	453,623	357,083	480,959	433,710	415,420	390,102	292,584	263,760

1955 Canadian Motor Vehicle Registrations—by Provinces

Province	Passenger Cars	Motor Trucks	Motor Buses	Other Motor Vehicles†	Total Motor Vehicles	Motor-cycles	Trailers
Newfoundland	27,474	11,161	135	694	39,464	286	393
Prince Edward Island	13,436	6,142	10	2,424	22,012	133	1,128
Nova Scotia	106,763	35,587	578	5,780	148,708	1,133	5,882
New Brunswick	74,602	23,549	445	7,090	105,686	962	5,564
Quebec	542,315	165,776	2,912	22,538	733,541	13,955	35,678
Ontario	1,292,133	309,294	4,105	.....	1,605,532	12,321	93,829
Manitoba	162,362	56,452	201	2,057	221,072	1,362	13,586
Saskatchewan	166,864	105,415	128	1,866	274,273	677	11,384
Alberta	236,395	116,078	2,717	....	355,190	1,649	1,774
British Columbia	303,481	98,557	1,240	3,540	406,818	3,765	20,355
Yukon and N.W. Territory	2,741	2,291	14	392	5,438	10	272
Total—Canada—1955	2,928,566	930,302	12,485	46,381	3,917,734	36,253	190,345
Total—Canada—1954	2,682,639	869,183	12,692	43,109	3,607,623	27,661	180,790
Total—Canada—1953	2,513,138	825,476	12,162	40,827	3,431,797	40,194	161,915
Total—Canada—1952	2,296,479	770,050	12,021	36,647	3,157,269	42,072	146,579

†—Includes road tractors, ambulances, fire trucks, hearses, government and municipal vehicles.

†—Includes Imperial. ††—Dealer Installations.

NEW REGISTRATIONS

PASSENGER CARS • TRUCKS

New Passenger Car Registrations by Makes, by Years

Based on data from R. L. Polk & Co.

Make of Car	1956 Units	1956 % of Total	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total
Hudson	30,529	.51	43,212	.60	35,824	.65	66,797	1.16	78,509	1.89
Nash	84,576	1.42	93,541	1.31	82,729	1.49	137,507	2.40	142,520	3.43
Total—American Motors	**115,105**	**1.93**	**136,753**	**1.91**	**118,553**	**2.14**	**204,304**	**3.56**	**221,029**	**5.32**
Chrysler	117,313	1.97	156,458	2.18	101,741	1.84	153,756	2.68	113,392	2.73
De Soto	100,766	1.69	118,062	1.65	76,739	1.39	122,342	2.13	91,677	2.20
Dodge	220,208	3.70	284,323	3.97	154,789	2.80	288,812	5.03	246,464	5.93
Plymouth	483,756	8.12	647,352	9.03	381,078	6.87	600,447	10.46	433,134	10.41
Total—Chrysler Motors	**922,043**	**15.48**	**1,206,195**	**16.83**	**714,347**	**12.90**	**1,165,357**	**20.30**	**884,667**	**21.27**
Continental	1,564	.03	606	.01	....	....	....	....	....	....
Ford	1,375,343	23.09	1,573,276	21.94	1,400,440	25.30	1,116,267	19.45	732,481	17.61
Lincoln	42,598	.72	35,017	.49	36,251	.65	39,169	.68	29,110	.70
Mercury	274,603	4.61	371,837	5.19	269,926	4.88	287,717	5.02	185,883	4.47
Total—Ford Motors	**1,694,108**	**28.45**	**1,980,736**	**27.63**	**1,706,617**	**30.83**	**1,443,153**	**25.15**	**947,474**	**22.78**
Buick	529,371	8.89	737,879	10.29	513,497	9.28	454,320	7.92	310,806	7.47
Cadillac	132,952	2.23	141,038	1.97	110,328	1.99	98,612	1.72	87,806	2.11
Chevrolet	1,565,399	26.30	1,640,681	22.88	1,417,453	25.61	1,342,480	23.39	852,542	20.50
Oldsmobile	437,896	7.35	589,515	8.22	407,150	7.35	305,593	5.32	218,189	5.25
Pontiac	358,668	6.02	530,007	7.39	358,167	6.47	385,692	6.72	266,351	6.41
Total—General Motors	**3,024,286**	**50.79**	**3,639,120**	**50.75**	**2,806,595**	**50.70**	**2,586,697**	**45.07**	**1,735,694**	**41.74**
Packard	28,396	.48	52,103	.73	38,396	.69	71,079	1.24	66,346	1.60
Studebaker	76,402	1.28	95,761	1.34	95,914	1.74	161,257	2.81	157,902	3.80
Total—S.-P. Corp.	**104,798**	**1.76**	**147,864**	**2.07**	**134,310**	**2.43**	**232,336**	**4.05**	**224,248**	**5.40**
Henry J	....	....	....	....	....	....	11,385*	.20	30,284*	.73
Kaiser	....	....	959	.01	8,889	.16	22,825	.40	41,022	.99
Willys	....	....	6,267	.09	17,002	.31	42,433	.74	41,016	.99
Total—Willys Motors	....	....	**7,226**	**.10**	**25,891**	**.47**	**76,643**	**1.34**	**112,322**	**2.71**
Crosley	....	....	....	....	....	....	....	....	2,679	.06
Misc. Domestic	3,866	.06	356	....	3,766	.07	1,538	.03	982	.02
Total—All Others	**3,866**	**.06**	**356**	....	**3,766**	**.07**	**1,538**	**.03**	**3,661**	**.08**
British Austin	1,125	.02	1,596	.02	1,528	.03	3,087	.05	4,804	.12
British Ford	4,230	.07	2,189	.03	1,622	.03	3,644	.06	3,854	.09
British Hillman	3,415	.06	2,778	.04	2,430	.04	4,506	.08	4,782	.11
British Jaguar	3,685	.06	3,573	.05	3,365	.06	3,914	.07	3,349	.08
British MG	6,094	.10	3,001	.04	3,454	.06	6,606	.11	7,449	.18
Volkswagon	50,001	.84	28,907	.40	6,343	.11	....	....	....	....
Misc. Foreign	22,492	.38	9,614	.13	6,643	.13	7,204	.13	5,061	.12
Total—Foreign	**91,042**	**1.53**	**51,658**	**.71**	**25,385**	**.46**	**28,961**	**.50**	**29,299**	**.70**
Total—All Makes	**5,955,248**	**100.00**	**7,169,908**	**100.00**	**5,535,464**	**100.00**	**5,738,989**	**100.00**	**4,158,394**	**100.00**

*—Includes Allstate. †—Includes Frazer.

New Truck Registrations by Makes, by Years

Based on data from R. L. Polk & Co.

Make of Truck	1956 Units	1956 % of Total	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total
Autocar	*	....	*	....	1,041	.13	1,713	.18	1,595	.19
Brockway	884	.10	1,144	.12	1,340	.16	2,080	.22	1,752	.22
Chevrolet	202,145	22.78	329,791	34.46	293,079	35.34	327,960	35.22	272,249	33.51
Diamond T	4,037	.45	3,697	.39	2,701	.33	3,398	.36	3,420	.42
Divco	3,112	.35	3,298	.34	2,505	.30	2,569	.28	2,752	.34
Dodge	57,651	6.45	66,208	6.92	60,658	7.32	82,345	8.85	102,129	12.58
Federal	†	....	56	....	248	.03	986	.11	841	.10
Ford	263,753	29.49	295,900	30.93	267,799	32.30	266,027	28.60	179,523	22.11
F.W.D.	481	.05	315	.03	392	.05	359	.04	543	.07
G.M.C.	82,266	9.20	84,877	8.87	66,664	8.04	82,296	8.85	79,612	9.80
International	108,014	12.08	100,441	10.50	84,222	10.15	95,404	10.25	92,788	11.42
Kenworth	1,239	.14	1,182	.12	697	.08	747	.08	705	.09
Mack	13,190	1.47	10,932	1.14	6,098	.74	6,890	.74	7,138	.88
Peterbilt	609	.07	424	.04	344	.04	332	.04	236	.03
Pontiac	....	....	....	....	....	....	468	.05	541	.07
Reo	2,974	.33	3,121	.33	2,283	.28	3,498	.38	3,393	.42
Studebaker	8,708	.97	10,817	1.13	10,193	1.23	22,473	2.42	28,985	3.57
White	15,137	1.69	14,372	1.50	10,340	1.25	12,261	1.32	10,858	1.34
White Sterling	†	....	†	....	†	....	†	....	250	.03
Willys—Jeep	9,131	1.02	10,441	1.09	7,598	.92	9,247	.99	8,594	1.06
Willys—Truck	14,357	1.61	16,811	1.76	9,925	1.20	8,465	.91	11,762	1.45
All Others	6,678	.75	3,174	.33	993	.11	794	.03	2,433	.30
Total	**894,366**	**100.00**	**957,001**	**100.00**	**829,101**	**100.00**	**930,312**	**100.00**	**812,099**	**100.00**

*—Included with White. †—Included with All Others

• NEW REGISTRATIONS •

New Car Registrations by Months, 1952-1956

Based on data from R. L. Polk & Co.

	1956		1955*		1954*		1953		1952	
	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total
January	431,648	7.25	440,024	6.14	340,698	6.15	386,221	6.73	301,379	7.25
February	447,542	7.52	476,254	6.64	369,682	6.68	396,558	6.91	295,459	7.10
March	545,234	9.16	636,457	8.88	480,641	8.68	486,368	8.47	322,857	7.76
April	564,272	9.48	627,636	8.75	508,102	9.18	528,278	9.20	374,288	9.00
May	560,014	9.40	660,161	9.21	520,958	9.41	540,575	9.42	422,217	10.15
June	539,777	9.06	679,097	9.47	596,719	10.78	542,025	9.45	423,655	10.19
July	534,997	8.98	645,391	9.00	474,316	8.57	533,783	9.30	340,454	8.19
August	568,320	9.54	652,300	9.10	440,312	7.95	502,430	8.75	215,668	5.19
September	421,021	7.07	651,808	9.09	407,844	7.37	453,806	7.91	318,870	7.67
October	424,414	7.13	572,640	7.99	389,352	7.03	504,697	8.79	383,385	9.22
November	403,948	6.78	503,286	7.02	378,513	6.84	450,311	7.85	360,256	8.66
December	514,061	8.63	624,854	8.71	628,327	11.36	413,937	7.22	299,906	9.62
Total	5,955,248	100.00	7,169,908	100.00	5,535,464	100.00	5,738,989	100.00	4,158,394	100.00

*—Monthly totals as reported by R. L. Polk & Co., adjusted to conform to year-to-date totals.

New Truck Registrations by Months, 1952-1956

Based on data from R. L. Polk & Co.

	1956		1955*		1954		1953		1952	
	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total
January	66,141	7.40	62,231	6.50	60,706	7.32	72,606	7.80	59,661	7.35
February	65,478	7.32	56,204	5.87	60,836	7.34	68,616	7.38	59,285	7.30
March	77,220	8.63	64,521	6.74	72,578	8.75	79,672	8.57	63,364	7.80
April	82,670	9.24	79,071	8.26	75,332	9.09	91,127	9.79	73,461	9.05
May	84,997	9.50	82,081	8.58	78,209	9.43	86,274	9.27	71,690	8.82
June	78,501	8.78	90,005	9.40	85,858	10.36	77,189	8.30	71,471	8.80
July	78,404	8.77	84,383	8.82	64,993	7.84	76,161	8.19	72,134	8.88
August	79,831	8.93	92,079	9.62	64,173	7.74	76,642	8.24	57,786	7.12
September	72,420	8.10	89,891	9.39	66,174	7.98	78,319	8.42	65,381	8.05
October	76,052	8.50	87,262	9.12	69,234	8.35	82,625	8.88	77,486	9.54
November	66,983	7.49	75,540	7.89	64,123	7.73	72,422	7.78	70,477	8.68
December	65,669	7.34	93,733	9.79	66,885	8.07	68,659	7.38	69,903	8.61
Total	894,366	100.00	957,001	100.00	829,101	100.00	930,312	100.00	812,099	100.00

*—Monthly totals as reported by R. L. Polk & Co., adjusted to conform to year-to-date totals.

New Motor Vehicle Registrations by States, 1954-1956

Based on data from R. L. Polk & Co.

	NEW PASSENGER CARS			NEW TRUCKS			TOTAL MOTOR VEHICLES		
State	1956	1955	1954	1956	1955	1954	1956	1955	1954
Alabama	84,634	101,651	72,893	18,006	21,652	17,247	102,640	123,303	90,140
Arizona	32,221	37,303	24,999	8,272	8,916	7,324	40,493	46,219	32,323
Arkansas	45,369	49,573	37,589	15,805	16,669	16,102	61,174	66,242	53,691
California	556,164	665,892	434,789	92,374	88,376	63,966	648,538	754,268	498,755
Colorado	51,764	61,925	46,007	11,165	12,759	10,342	62,929	74,684	56,349
Connecticut	89,346	105,879	86,202	9,458	9,071	7,487	98,804	114,950	93,689
Delaware	18,867	22,940	17,101	2,696	3,449	2,527	21,563	26,389	19,628
District of Columbia	26,506	34,729	25,169	2,426	2,606	2,187	28,932	37,335	27,356
Florida	175,651	195,468	131,433	27,210	28,160	22,072	202,861	223,628	153,505
Georgia	121,633	139,382	98,437	25,233	26,879	24,601	146,866	166,261	123,038
Idaho	20,408	24,272	19,187	6,260	6,849	5,976	26,668	31,121	25,163
Illinois	398,174	460,883	398,306	37,191	39,786	37,376	435,365	500,669	435,682
Indiana	188,423	229,951	172,344	25,421	28,976	24,212	213,844	258,927	196,556
Iowa	82,895	108,294	98,534	13,603	16,770	18,308	97,498	125,064	116,842
Kansas	80,973	99,292	86,826	13,534	16,616	16,371	94,507	115,908	103,197
Kentucky	73,560	86,105	66,927	15,131	16,297	15,658	88,691	102,402	82,585
Louisiana	91,588	101,265	83,500	20,161	21,781	18,539	111,749	123,046	102,039
Maine	27,400	30,191	23,266	6,045	6,198	5,023	33,445	36,389	28,289
Maryland	102,841	118,567	87,142	11,293	11,267	9,881	114,134	129,834	97,023
Massachusetts	156,987	177,672	155,881	16,869	13,879	12,530	173,856	191,551	168,411
Michigan	348,138	512,525	375,625	34,987	41,034	34,776	383,125	553,559	410,401
Minnesota	115,709	129,423	116,696	16,579	17,526	17,223	132,288	146,949	133,919
Mississippi	52,053	61,307	47,000	16,504	19,385	18,180	68,562	81,192	65,180
Missouri	148,169	178,704	147,737	22,910	25,674	23,498	171,079	204,378	171,235
Montana	24,256	27,045	22,703	7,332	8,478	7,201	31,588	35,523	29,904
Nebraska	43,929	59,626	53,216	8,317	11,707	11,571	52,246	71,333	64,787
Nevada	10,945	12,067	8,052	3,111	2,634	2,161	14,056	14,701	10,213
New Hampshire	19,067	23,048	18,138	2,798	3,282	2,899	22,865	26,330	21,037
New Jersey	222,728	258,527	216,076	22,464	22,826	21,047	245,192	281,353	237,123
New Mexico	25,922	30,501	22,508	8,480	8,597	7,059	34,402	39,098	29,567
New York	511,096	634,859	481,073	49,602	50,720	41,352	560,698	685,579	522,430
North Carolina	107,139	132,114	96,986	23,118	25,181	22,130	130,257	157,295	119,116
North Dakota	19,446	22,055	21,654	4,818	5,021	5,221	24,264	27,076	26,875
Ohio	387,257	443,762	331,768	38,921	42,315	35,857	426,178	486,077	367,625
Oklahoma	75,446	94,347	76,428	17,266	20,205	18,656	92,712	114,552	95,084
Oregon	70,531	81,402	54,814	15,369	15,859	11,941	85,900	97,261	66,755
Pennsylvania	386,977	463,339	359,822	42,689	45,452	38,654	430,666	508,791	398,476
Rhode Island	23,996	32,537	27,183	3,103	3,155	2,444	27,099	35,692	29,627
South Carolina	52,355	60,217	47,052	10,102	10,113	9,832	62,457	70,330	56,884
South Dakota	19,374	24,112	22,164	4,788	5,131	4,908	24,662	29,243	27,072
Tennessee	90,605	118,864	91,224	17,293	18,736	18,258	107,898	137,600	109,482
Texas	345,288	429,931	349,509	70,443	80,756	72,059	415,731	510,687	421,568
Utah	24,029	27,262	19,366	5,295	5,541	4,429	29,324	32,803	23,795
Vermont	13,789	14,653	11,926	3,312	3,030	2,514	17,101	17,683	14,440
Virginia	117,344	135,549	112,992	19,304	20,272	17,373	136,648	155,821	131,365
Washington	75,960	89,231	63,579	15,398	15,770	12,480	91,358	105,001	76,059
West Virginia	53,403	54,951	39,154	9,414	9,936	7,130	62,822	64,887	46,284
Wisconsin	131,296	151,246	120,572	16,443	16,969	16,329	147,744	168,215	136,901
Wyoming	12,087	14,970	12,910	4,048	4,740	4,190	16,135	19,710	17,100
Total	5,955,248	7,169,908	5,535,464	894,366	957,001	829,101	6,849,614	8,126,909	6,364,565

Total																				

*—Included with White. †—Included with All Others

• NEW REGISTRATIONS •

1956 New Car Registrations by Price Classes—by Months†

Month	Under $2,000		$2,001 to $2,500		$2,501 to $3,500		Over $3,500		Total	
	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total
January	75,405	17.68	235,466	55.21	95,987	22.51	19,614	4.60	426,472	100.00
February	83,002	18.77	245,883	55.60	95,188	21.53	18,137	4.10	442,210	100.00
March	100,633	18.68	302,507	56.14	114,112	21.18	21,539	4.00	538,791	100.00
April	107,054	19.24	310,121	55.72	116,422	20.92	22,941	4.12	556,538	100.00
May	107,627	19.49	289,280	52.40	132,860	24.06	22,378	4.05	552,145	100.00
June	102,861	19.38	283,593	53.42	123,876	23.33	20,556	3.87	530,886	100.00
July	85,345	16.20	299,942	56.91	121,764	23.11	19,905	3.78	526,956	100.00
August	86,284	15.41	317,399	56.69	133,435	23.83	22,792	4.07	559,910	100.00
September	65,641	15.85	232,734	56.20	98,709	23.84	17,016	4.11	414,100	100.00
October	17,629	4.25	266,945	64.30	116,545	28.07	14,012	3.38	415,131	100.00
November	13,514	3.42	261,409	66.06	100,641	25.44	20,092	5.08	395,656	100.00
December	16,527	3.28	305,977	60.73	138,522	27.49	42,326	8.50	503,862	100.00
Total—1956	861,532	14.70	3,351,256	57.15	1,388,061	23.68	261,808	4.47	5,862,657	100.00
Total—1955	3,392,525	47.31	2,738,428	38.19	823,014	11.48	216,587	3.02	7,170,554	100.00

†—Based on new passenger car registrations of American made cars only, as reported by R. L. Polk & Co.

1956 Retail Dollar Volume of New Car Sales—by Price Classes*

Month	Under $2,000		$2,001 to $2,500		$2,501 to $3,500		Over $3,500		Total	
	Value	% of Total	Value	% of Total	Value	% of Total	Value	% of Total	Value	% of Total
January	$ 145,941,485	14.60	$ 504,235,260	50.45	$ 267,603,462	26.77	$ 81,714,192	8.18	$ 999,494,399	100.00
February	160,690,149	15.62	527,588,842	51.29	264,711,071	25.74	75,611,080	7.35	1,028,601,142	100.00
March	197,555,811	15.62	655,606,766	51.85	318,002,730	25.14	93,522,869	7.39	1,264,688,176	100.00
April	210,073,813	16.10	671,601,551	51.48	323,466,884	24.80	99,340,132	7.62	1,304,482,430	100.00
May	211,696,541	16.35	621,240,984	47.97	365,105,253	28.20	96,833,717	7.48	1,294,876,495	100.00
June	202,264,131	16.34	608,255,745	49.12	338,906,853	27.37	88,770,915	7.17	1,238,197,644	100.00
July	167,263,770	13.64	640,961,714	52.28	331,959,668	27.07	85,895,117	7.01	1,226,080,269	100.00
August	169,301,324	12.90	679,888,826	51.81	364,819,656	27.80	98,275,292	7.49	1,312,285,098	100.00
September	128,760,476	13.28	499,675,364	51.53	268,102,007	27.65	73,065,559	7.54	969,603,406	100.00
October	34,131,572	3.45	578,763,860	58.50	316,608,265	32.00	59,826,129	6.05	989,329,826	100.00
November	26,324,980	2.78	561,484,816	59.30	277,806,453	29.34	81,205,572	8.58	946,821,821	100.00
December	32,326,675	2.57	662,065,836	52.66	383,176,540	30.48	179,696,612	14.29	1,257,265,663	100.00
Total—1956	$1,686,330,727	12.19	$7,211,369,564	52.14	$3,820,268,842	27.62	$1,113,757,236	8.05	$13,831,726,369	100.00
Total—1955	$6,444,944,567	40.57	$6,239,448,805	39.27	$2,320,724,016	14.61	$ 882,544,448	5.55	$15,887,661,836	100.00

*—Calculated on the basis of new registrations of American made cars only, in conjunction with the advertised delivered price at factory of four-door sedan or equivalent model.

1956 New Truck Registrations by Makes, by States

Based on data from R. L. Polk & Co.

State	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Peter-bilt	Reo	Studе-baker	White	Willys Jeep	Willys Truck	All Others	Total
Alabama		7,082	22	55	956	5,008		2,321	1,797		269		23	76	228	60	87	22	18,006
Arizona		3,084	22	20	576	2,262	2	984	658	37	40		23	108	69	101	188	98	8,272
Arkansas		6,300	34	1	692	4,958	1	1,637	1,733		57		1	178	82	70	51	10	15,805
California	2	33,823	350	164	6,198	29,152	68	8,338	6,642	375	383	408	307	885	780	1,011	1,507	1,981	92,374
Colorado		3,963	45	25	693	3,013	6	1,010	1,204	28	99	6	21	108	91	312	494	47	11,185
Connecticut	18	2,634	107	131	692	2,208	4	837	1,434		305		74	110	347	160	269	128	9,458
Delaware	1	853	16	9	230	617	1	281	413	1	117		1	19	57	37	26	17	2,696
Dist. of Col.		724	3	39	181	677		265	344		46		25	7	28	8	46	33	2,426
Florida	1	8,787	107	151	1,421	8,668	5	2,376	2,528	2	688	2	174	285	507	470	696	342	27,210
Georgia	2	8,749	70	6	1,349	8,821		2,534	2,377	3	340		27	219	367	143	165	61	25,233
Idaho		1,878	4		477	1,560	1	720	886	8	39	6	2	168	53	131	294	33	6,260
Illinois		11,918	456	146	2,255	11,034	27	3,206	5,947		322		76	361	635	249	265	294	37,191
Indiana	1	8,243	185	147	1,520	7,013	8	2,000	4,144	28	336		111	544	746	109	171	115	25,421
Iowa		4,472	125	78	691	4,174	21	847	2,721	6	28	9	18	124	120	27	52	90	13,603
Kansas		4,897	29	21	583	4,418	3	1,125	1,909	1	24		42	149	113	40	136	44	19,534
Kentucky		5,580	40	17	908	4,330	13	1,701	1,719		113		39	132	142	176	198	23	15,131
Louisiana		7,989	61	5	929	6,812	3	1,791	1,783	5	167		31	136	141	146	127	35	20,161
Maine	7	1,688	9	32	419	1,605	1	661	910		85		3	87	58	148	248	84	6,045
Maryland	15	3,728	18	53	1,004	3,362	2	749	1,491		286		76	94	206	55	102	52	11,293
Massachusetts	68	3,957	134	212	1,450	5,007	6	1,610	2,185		572		106	106	599	256	417	184	16,869
Michigan		11,980	251	257	3,236	10,993	6	3,433	2,656	2	299		161	237	517	346	429	184	34,987
Minnesota		5,109	76	45	894	5,265	31	1,413	2,717	128	120		53	210	128	111	224	55	16,579
Mississippi		6,558	5	2	650	5,099		1,719	2,035		66		2	164	34	98	61	11	16,504
Missouri		8,741	91	36	1,179	6,485	1	2,307	3,011	2	84		51	190	421	118	94	99	22,910
Montana		2,035	2	4	448	1,949	2	719	1,234	34	68	7	17	116	47	202	402	46	7,332
Nebraska		2,615	96	58	361	2,356	10	679	1,608	15	20	22	29	84	158	81	109	15	8,317
Nevada		931	6	2	290	722	2	491	243	6	27	6		94	4	57	171	59	3,111
New Hampshire	3	965	7	24	289	872	2	350	524		164		19	59	57	146	263	54	3,798
New Jersey	163	6,324	200	223	2,104	6,108	8	2,138	2,749	1	736		74	150	710	186	339	251	22,464
New Mexico		3,508	14		416	2,215	8	986	698	38	134	4	23	64	62	113	191	6	8,480
New York	438	12,751	216	318	4,556	13,006	37	4,604	7,303	3	1,596	2	435	315	1,369	705	1,158	790	49,602
North Carolina		8,571	146	23	1,207	7,231	3	2,094	2,225		595		32	262	370	135	163	61	23,118
North Dakota		1,411		4	313	1,387	1	373	1,153	1	1		5	53	5	40	63	8	4,815
Ohio	1	11,747	181	317	2,916	11,973	5	3,094	5,464		614		215	318	1,001	357	554	164	38,921
Oklahoma		6,939	15	19	676	5,430	42	1,486	2,024	2	119		49	133	186	60	57	29	17,266
Oregon		4,438	75	32	908	3,740	1	1,769	2,057	147	173	83	49	326	434	242	659	236	15,389
Pennsylvania	140	12,224	255	213	3,828	11,792	32	3,731	6,160		1,388		177	490	1,301	562	1,182	214	43,689
Rhode Island		1,079	29	25	232	795		255	381		91		22	27	40	37	49	41	3,103
South Carolina		3,918	8		640	3,330	3	850	841		205		6	79	119	42	39	22	10,102
South Dakota		1,323	28		234	1,229	1	451	1,176	45	9		13	41	11	86	122	19	4,786
Tennessee		5,934	42	4	1,121	4,984		1,843	1,975		425		42	97	598	91	105	32	17,293
Texas		29,745	284	29	2,500	21,700	14	5,132	7,341	110	845	2	82	490	1,327	400	358	84	70,443
Utah		1,752	29	7	426	1,272	5	567	620	58	53	35	18	65	62	92	200	34	5,295
Vermont	20	805	8	6	186	805	1	351	548		57		3	53	11	176	236	46	3,212
Virginia	4	6,658	23	32	1,500	5,707	2	1,610	2,042		528		90	208	340	210	284	66	19,304
Washington		4,719	48	34	1,296	3,898	13	2,028	1,815	149	176	14	44	163	135	172	479	215	15,398
West Virginia		2,760	4	13	726	2,815	15	978	994		70		33	122	134	313	398	39	9,414
Wisconsin		5,007	54	73	1,081	4,812	61	1,361	3,004		190		48	162	155	121	222	97	16,448
Wyoming		1,249	7		214	1,084	3	461	591	4	21	3	2	40	32	123	207	7	4,048
Total	894	302,145	4,037	3,112	57,651	263,753	481	82,266	108,014	1,239	13,190	609	2,974	6,708	15,137	9,131	14,357	6,678	894,366

• NEW REGISTRATIONS •

Regional Sales of New Passenger Cars

Based on data from R. L. Polk & Co.

Zone	Region	1956 Units	1956 % of Total	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total
1	New England	330,585	5.55	383,980	5.36	322,596	5.83	329,519	5.74	238,870	5.74
2	Middle Atlantic	1,120,801	18.82	1,356,725	18.92	1,056,976	19.09	1,109,162	19.33	793,847	19.09
3	South Atlantic	775,744	13.03	893,917	12.47	656,466	11.86	664,688	11.58	491,282	11.81
4	East North Central	1,453,288	24.40	1,798,367	25.07	1,398,615	25.27	1,503,850	26.20	1,060,581	25.51
5	East South Central	300,857	5.05	368,427	5.14	278,044	5.02	277,046	4.83	195,897	4.71
6	West North Central	511,995	8.60	621,506	8.67	546,827	9.88	571,507	9.96	402,934	9.69
7	West South Central	557,691	9.36	675,116	9.42	547,026	9.88	518,964	9.04	377,208	9.07
8	Mountain	201,632	5.39	235,345	3.28	175,732	3.17	182,424	3.18	143,182	3.44
9	Pacific	702,655	11.80	836,525	11.67	553,182	10.00	581,829	10.14	454,593	10.94
	Total—United States	5,955,248	100.00	7,169,908	100.00	5,535,464	100.00	5,738,989	100.00	4,158,394	100.00

Regional Sales of New Trucks

Based on data from R. L. Polk & Co.

Zone	Region	1956 Units	1956 % of Total	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total
1	New England	42,585	4.76	38,615	4.03	32,897	3.97	34,355	3.70	33,136	4.09
2	Middle Atlantic	115,755	12.94	118,998	12.43	101,053	12.19	119,169	12.81	101,520	12.51
3	South Atlantic	130,796	14.62	137,863	14.41	117,733	14.20	129,933	13.97	117,937	14.52
4	East North Central	152,968	17.11	169,080	17.67	148,550	17.92	174,643	18.77	142,399	17.53
5	East South Central	66,934	7.48	76,070	7.95	69,343	8.36	77,433	8.32	67,526	8.31
6	West North Central	84,549	9.45	98,445	10.29	97,100	11.71	111,304	11.96	97,540	12.01
7	West South Central	123,675	13.84	139,411	14.57	125,356	15.12	135,266	14.54	120,147	14.79
8	Mountain	53,963	6.03	58,514	6.11	48,682	5.87	51,731	5.56	48,889	6.02
9	Pacific	123,141	13.77	120,005	12.54	88,387	10.66	96,478	10.37	83,005	10.22
	Total United States	894,366	100.00	957,001	100.00	829,101	100.00	930,312	100.00	812,099	100.00

States comprising the various regions are: Zone 1: Conn., Mass., Me., N. H., R. I., Vt.—Zone 2: N. J., N. Y., Pa.—Zone 3: Del., D. of C., Fla., Ga., Md., N. C., S. C., W. Va.—Zone 4: Ill., Ind., Mich., Ohio, Wisc.—Zone 5: Ala., Ky., Miss., Tenn.—Zone 6: Iowa, Kan., Minn., Mo., Neb., N. D., S. D.—Zone 7: Ark., La., Okla., Tex.—Zone 8: Ariz., Colo., Ida., Mont., Nev., N. M., Utah, Wyo.—Zone 9: Cal., Ore., Wash.

1956 New Passenger Car Registrations, by Makes, by States

Based on data from R. L. Polk & Co.

State	Buick	Cadillac	Chevrolet	Chrysler	Continental	De Soto	Dodge	Ford	Hudson	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Misc. Dom.	Foreign	Total
Ala.	7,567	1,295	28,812	1,190	9	744	1,947	21,014	320	426	3,672	605	5,427	180	5,552	4,598	794	7	475	84,634
Ariz.	2,608	804	8,842	581	15	370	914	8,330	177	229	1,422	489	1,985	161	2,146	1,869	546	1	732	32,221
Ark.	3,067	687	13,641	480	2	379	1,421	12,287	184	242	2,499	384	3,194	91	3,620	2,492	575	.....	124	45,389
Cal.	47,054	16,431	134,061	11,548	366	8,442	19,347	118,030	2,395	5,757	34,027	8,811	35,007	2,236	39,929	34,383	7,163	38	31,139	556,164
Col.	4,031	1,117	14,477	968	14	692	2,108	11,939	466	477	2,593	1,071	3,518	271	3,958	2,858	754	45	407	51,764
Conn.	7,471	2,045	20,055	2,473	21	1,563	4,342	19,091	682	611	3,976	2,007	7,026	703	7,408	5,932	1,320	5	2,615	89,346
Del.	1,585	376	5,045	303	1	236	756	4,540	16	138	946	163	1,375	49	1,814	1,224	222	.....	178	18,867
D. of C.	2,077	756	7,196	613	3	499	977	4,946	91	189	975	203	1,901	172	3,361	1,807	153	.....	587	26,506
Fla	14,618	5,511	49,555	3,007	97	2,272	5,647	44,615	861	1,837	7,268	1,969	12,170	667	10,614	8,695	1,712	30	4,506	175,651
Ga.	9,092	2,023	38,767	1,432	19	1,020	3,382	33,631	155	542	4,871	927	7,844	339	7,651	7,845	1,333	10	750	121,833
Idaho	2,029	452	5,003	445	1	338	911	4,053	365	171	1,083	567	1,348	112	1,510	1,347	511	.....	162	20,408
Ill.	37,087	10,368	105,639	8,421	106	6,638	12,766	87,231	2,509	3,372	18,698	6,732	31,774	2,134	30,960	25,070	5,677	417	2,575	398,174
Ind.	18,231	3,853	48,671	3,529	35	3,399	6,847	42,548	983	1,322	8,961	2,501	14,967	945	14,479	11,527	4,650	26	949	188,423
Iowa	7,617	1,470	24,016	1,535	13	1,007	3,062	20,660	567	469	3,866	1,200	5,537	315	6,198	4,682	1,132	7	542	83,895
Kan.	7,012	1,519	23,196	1,237	23	1,018	2,513	20,130	575	432	3,963	1,393	5,781	421	5,440	4,757	1,211	9	343	80,373
Ky.	6,618	1,035	23,589	921	6	789	2,147	17,963	247	282	3,291	465	5,668	209	5,269	4,135	623	25	278	73,560
La.	6,755	1,570	28,128	1,098	9	856	2,152	24,297	155	408	3,860	594	7,165	300	5,560	7,199	1,055	1	426	91,588
Me.	2,092	441	7,120	398	5	475	1,068	6,575	355	134	1,133	633	1,551	124	2,500	1,765	537	4	490	27,400
Md.	8,294	1,690	28,765	2,101	16	2,023	4,383	22,736	311	513	4,023	1,022	6,980	682	10,743	6,107	1,367	2	1,083	102,841
Mass.	13,625	2,978	34,640	3,315	40	2,899	5,721	36,001	1,379	1,098	6,209	4,039	15,248	869	13,882	10,410	1,548	14	3,072	156,987
Mich.	33,787	9,628	95,204	5,314	68	5,948	12,137	81,068	1,712	2,844	15,599	5,032	26,805	1,320	26,620	19,237	3,032	43	2,740	348,138
Minn.	10,044	2,123	31,113	1,962	21	2,105	4,708	26,991	834	713	5,139	1,867	10,087	691	8,297	6,183	2,150	157	524	115,709
Miss.	4,088	745	16,401	656	2	507	1,439	13,754	100	184	2,210	151	3,373	136	4,399	3,033	758	3	119	52,058
Mo.	12,151	2,968	44,579	1,839	54	2,417	3,737	34,253	288	726	6,954	1,862	10,267	714	13,605	8,792	2,040	14	929	148,169
Mont.	1,938	529	6,217	555	7	296	1,111	5,720	363	178	1,096	494	1,624	159	1,835	1,327	475	2	330	24,256
Neb.	4,165	901	12,498	732	8	519	1,385	11,159	207	262	1,959	530	2,818	279	3,223	2,611	544	1	128	43,929
Nev.	866	355	2,298	225	10	170	328	2,517	21	141	658	153	823	91	684	782	359	1	463	10,945
N H	1,421	304	4,778	344	7	259	818	4,257	256	122	930	482	1,287	85	1,499	1,378	337	5	498	19,067
N. J.	20,892	5,982	48,804	7,131	72	6,834	11,041	47,522	868	1,935	9,464	2,499	17,105	1,244	22,541	12,817	2,703	23	3,251	222,728
N. M.	2,064	611	7,675	509	8	316	742	6,312	70	205	1,435	235	1,808	61	1,541	1,771	292	1	266	25,922
N. Y.	46,768	14,121	110,966	15,122	125	11,896	22,630	103,676	2,656	4,231	21,793	7,188	44,622	2,877	51,202	32,377	5,874	2,569	10,403	511,096
N. C.	9,042	1,906	29,345	1,784	19	1,472	3,051	30,321	339	477	4,488	936	7,292	376	8,273	6,168	1,277	23	550	107,139
N. D.	1,394	302	5,402	411	2	277	786	5,164	149	134	938	346	1,379	105	1,544	731	330	2	50	19,446
Ohio	37,402	7,536	94,854	8,073	59	8,019	19,034	89,062	1,704	2,866	18,295	4,490	28,986	2,029	32,290	25,609	4,169	126	2,654	387,257
Okla.	6,135	1,560	22,589	814	13	928	2,015	20,011	234	403	3,471	702	5,550	287	4,978	4,521	855	5	375	75,446
Ore.	6,124	1,396	17,962	1,046	22	1,164	2,854	15,616	523	549	3,474	1,842	4,642	273	4,385	4,560	1,477	8	2,620	70,531
Pa.	36,259	7,469	88,321	10,122	74	9,114	19,053	80,438	2,321	2,645	17,219	5,578	27,462	2,940	45,831	22,701	5,467	162	3,801	386,977
R. I.	2,001	586	5,445	633	12	319	782	5,268	221	174	1,038	642	2,130	153	2,260	1,329	384	2	617	23,996
S. C.	4,433	825	16,711	606	12	585	1,434	14,328	85	195	2,011	327	3,255	67	3,804	2,824	501	4	348	52,355
S. D.	1,650	304	5,713	321	3	248	733	4,946	191	108	858	408	1,329	111	1,458	1,078	332	3	80	19,874
Tenn.	8,472	1,431	27,677	1,129	15	1,016	2,711	23,483	257	364	3,938	719	6,516	238	6,822	4,543	1,005	10	259	90,605
Texas	30,659	7,332	110,864	4,352	98	3,337	8,506	89,000	843	1,823	15,008	2,330	25,055	826	20,336	19,796	3,409	11	1,703	345,288
Utah	2,340	588	6,034	598	8	614	838	4,865	144	220	1,565	353	1,862	105	1,577	1,614	252	2	450	24,029
Vt.	1,124	187	3,624	262	3	166	523	5,428	90	60	508	364	830	51	1,148	828	247	3	343	13,789
Va.	9,785	2,006	31,296	2,242	18	1,992	3,869	29,308	508	572	5,217	1,318	7,096	595	10,657	7,942	1,300	8	1,615	117,344
Wash.	6,679	1,159	18,897	1,400	18	1,166	3,069	18,249	694	456	3,117	2,123	4,385	342	5,611	4,374	1,207	7	3,007	75,960
W. Va.	4,433	673	13,768	1,073	7	862	2,648	12,537	265	286	2,588	657	3,053	383	5,700	3,253	810	14	398	53,408
Wis.	13,574	2,676	33,565	2,264	15	2,381	5,392	28,805	1,718	969	5,670	5,013	10,208	814	8,330	7,082	1,787	15	1,018	131,206
Wyo.	1,151	334	3,581	199	3	180	423	2,668	75	107	627	160	881	64	712	705	146	1	70	12,087
Total	529,371	132,952	1,565,399	117,313	1,564	100,768	228,208	1,375,343	30,529	42,598	274,603	84,576	437,896	28,396	483,756	358,668	76,402	3,866	91,042	5,955,248

• NEW REGISTRATIONS •

New Truck Registrations—By Makes and G.V.W.

Based on data from R. L. Polk & Co.

	Year	5,000 lb. and Less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
BROCKWAY	1956	....	....	....	....	118	130	636	884
	1955	....	....	....	....	189	228	727	1,144
	1954	....	....	....	....	100	128	1,112	1,340
CHEVROLET	1956	178,100	47,964	11,348	60,021	4,712	....	....	302,145
	1955	189,808	53,904	12,615	73,464	....	....	....	329,791
	1954	161,353	56,206	12,635	62,856	....	....	....	293,079
DIAMOND T	1956	....	....	....	103	344	1,169	2,421	4,037
	1955	....	....	....	498	599	823	1,777	3,697
	1954	....	....	....	533	473	715	980	2,701
DIVCO	1956	....	2,321	791	....	....	....	....	3,112
	1955	....	2,415	883	....	....	....	....	3,298
	1954	....	1,899	606	....	....	....	....	2,505
DODGE	1956	22,872	17,633	2,634	7,968	3,755	2,125	664	57,651
	1955	22,009	24,055	1,865	9,903	6,833	1,210	333	66,208
	1954	26,081	15,161	1,708	11,406	4,884	974	444	60,658
FORD	1956	129,137	42,229	12,788	54,186	10,389	9,210	5,814	263,753
	1955	157,559	47,811	12,861	52,331	13,423	8,004	3,911	295,900
	1954	141,839	45,298	14,103	46,916	8,941	7,800	2,902	267,799
F.W.D.	1956	....	....	....	21	26	171	263	481
	1955	....	....	....	11	53	186	95	315
	1954	....	....	....	15	29	259	90	393
G.M.C.	1956	28,313	11,612	3,033	10,928	10,158	10,738	6,984	82,266
	1955	33,425	13,401	3,758	11,122	9,669	8,109	5,393	84,877
	1954	24,626	11,321	2,728	12,479	6,035	4,682	4,273	66,644
INTERNATIONAL	1956	20,696	23,830	4,957	7,514	18,129	15,733	17,155	108,014
	1955	29,466	15,315	3,351	16,825	14,663	8,928	11,893	100,441
	1954	30,007	12,603	2,497	14,131	10,565	7,197	7,222	84,222
KENWORTH	1956	....	....	....	....	....	....	1,239	1,239
	1955	....	....	....	....	....	....	1,182	1,182
	1954	....	....	....	....	....	....	697	697
MACK	1956	....	....	....	....	177	1,869	11,144	13,190
	1955	....	....	....	....	199	1,987	8,746	10,932
	1954	....	....	....	....	192	1,270	4,636	6,098
PETERBILT	1956	....	....	....	....	....	....	609	609
	1955	....	....	....	....	....	....	424	424
	1954	....	....	....	....	....	....	344	344
REO	1956	....	....	....	211	393	735	1,635	2,974
	1955	....	....	....	349	605	1,018	1,149	3,121
	1954	....	....	....	424	291	1,093	475	2,283
STUDEBAKER	1956	5,771	1,476	319	1,142	....	....	....	8,708
	1955	6,648	1,972	625	1,572	....	....	....	10,817
	1954	5,936	1,946	1,155	1,156	....	....	....	10,193
WHITE	1956	....	....	....	....	350	1,053	13,734	15,137
	1955	....	....	....	....	617	1,908	11,847	14,372
	1954	....	....	....	....	834	4,737	5,810	11,381
WILLYS-JEEP	1956	9,131	....	....	....	....	....	....	9,131
	1955	10,441	....	....	....	....	....	....	10,441
	1954	7,598	....	....	....	....	....	....	7,598
WILLYS-TRUCK	1956	7,490	6,867	....	....	....	....	....	14,357
	1955	8,012	8,799	....	....	....	....	....	16,811
	1954	3,099	6,826	....	....	....	....	....	9,925
ALL OTHERS	1956	5,462	....	4	....	4	239	968	6,678
	1955	3,227	1	9	2	16	187	788	1,003
	1954	520	....	....	3	32	236	450	1,241
TOTAL	1956	407,473	153,932	35,874	142,094	48,555	43,172	63,266	894,366
	1955	459,595	167,673	35,967	166,077	46,836	32,588	48,265	957,001
	1954	401,088	141,760	35,432	149,919	32,376	29,091	29,435	829,101
	1953	460,997	172,732	45,353	150,729	36,820	36,243	27,438	930,312
	1952	350,739	156,560	52,949	159,881	33,149	36,316	22,505	812,099
	1951	469,625	192,274	70,378	169,900	36,790	43,561	21,322	1,003,850
% OF TOTAL	1956	45.56%	17.21%	4.01%	15.89%	5.43%	4.83%	7.07%	100.00%
	1955	48.02%	17.52%	3.76%	17.35%	4.89%	3.41%	5.05%	100.00%
	1954	48.38%	18.30%	4.27%	18.08%	3.91%	3.51%	3.55%	100.00%
	1953	49.55%	18.57%	4.87%	16.20%	3.96%	3.90%	2.95%	100.00%
	1952	43.19%	19.28%	6.52%	19.69%	4.08%	4.47%	2.77%	100.00%
	1951	46.80%	19.15%	7.01%	16.92%	3.66%	4.34%	2.12%	100.00%

New Car and Truck Registrations—by Years*

Year	New Passenger Cars	New Commercial Vehicles
1929	3,880,206	527,057
1930	2,625,979	410,699
1931	1,908,141	313,884
1932	1,096,399	180,413
1933	1,943,794	245,869
1934	1,888,557	402,886
1935	1,743,908	510,633
1936	3,404,497	611,644
1937	3,483,752	618,249
1938	1,891,021	365,349
1939	2,653,377	486,748
1940	3,415,905	559,150
1941	3,731,166	640,697
1942	304,691	77,422
1943	205,805	62,469
1944	65,730	121,269
1945	71,877	350,932
1946	1,815,196	625,249
1947	3,167,231	879,132
1948	3,490,952	1,035,174
1949	4,838,342	961,961
1950	6,326,439	1,142,307
1951	5,060,903	1,003,850
1952	4,158,394	812,099
1953	5,738,989	930,312
1954	5,535,464	829,101
1955	7,169,908	957,001
1956	5,955,248	894,366

*Sources: 1929 through February 1942 and 1946 and later years compiled by R. L. Polk & Co. Passenger car data from March, 1942, through July, 1945, are from OPA and represent new car releases to civilian users. Commercial car data from April, 1942, through July, 1945, are from WPB and ODT and represent certificates of transfer issued to civilian users, excluding government exemption permits.

1956 New Car Registrations—by Rank

Make	Units
Chevrolet	1,565,399
Ford	1,375,343
Buick	529,371
Plymouth	483,756
Oldsmobile	437,896
Pontiac	358,668
Mercury	274,603
Dodge	220,208
Cadillac	132,952
Chrysler	117,313
De Soto	100,766
Nash	84,576
Studebaker	76,402
Lincoln	42,598
Hudson	30,529
Packard	28,396
Continental	1,564
Misc. Domestic	3,866
Foreign	91,042
Total	5,955,248

1956 New Truck Registrations—by Rank

Make	Units
Chevrolet	302,145
Ford	263,753
International	108,014
G.M.C.	82,266
Dodge	57,651
White	15,137
Willys Truck	14,357
Mack	13,190
Willys Jeep	9,131
Studebaker	8,708
Diamond T	4,037
Divco	3,112
Reo	2,974
Kenworth	1,239
Brockway	884
Peterbilt	609
F.W.D.	481
Misc. Domestic	1,218
Foreign	5,460
Total	894,366

DISTRIBUTION OUTLETS

Automotive Wholesalers, Dealers and Repair Shops—By Years

Trade List Department, Chilton Company, as of January of Each Year

	Wholesalers	Passenger Car Dealers	Total Truck Dealers	Car and Truck Dealers	Independent Repair Shops	All Retail Outlets
1933	5,337	38,002	23,746	39,370	59,547	103,113
1934	5,430	34,069	.....	35,265	65,064	102,456
1935	5,747	35,977	.....	37,238	64,518	105,991
1936	5,905	39,769	23,045	41,201	60,574	105,579
1937	5,874	41,288	24,853	43,461	56,423	102,808
1938	5,934	43,747	27,248	46,224	51,709	101,053
1939	6,019	39,936	26,909	41,992	50,406	95,418
1940	6,176	39,258	24,575	41,870	49,091	93,764
1941	6,575	39,833	24,992	41,790	49,208	95,296
1942	6,631	38,748	22,291	40,537	57,552	93,022
1943	6,130	32,470	27,820	34,270	42,540	86,863
1944	6,101	31,200	.....	33,000	42,166	78,550
1945	6,217	30,110	26,370	31,930	41,198	78,498
1946	6,612	30,709	27,159	32,439	42,702	81,638
1947	7,328	34,424	29,397	36,354	49,485	91,229
1948	7,982	38,480	25,998†	40,410	55,694	104,504
1949	8,338	40,022	27,584	43,004	59,908	109,499
1950	8,567	43,079	28,307	45,918	63,714	115,026
1951	8,687	43,115	30,297	46,251	71,199	117,450
1952	8,703	43,257	30,009	46,271	70,324	116,595
1953	8,988	45,248	31,149	48,155	72,452	120,607
1954	9,230	44,402	31,055	47,463	74,570	122,033
1955	9,446	42,340	29,189	45,704	77,881	123,585
1956	9,502	40,786	30,079	44,386	81,773	126,159
1957	10,084	39,073	27,384	42,431	86,738	129,169

† Reduction in truck dealers caused by discontinuance of Plymouth truck production.

Automotive Wholesale and Retail Outlets by States

With Number of Motor Vehicles per Outlet

Trade List Department, Chilton Company; as of January, 1957

STATE	Total Motor Vehicle Registrations	WHOLESALERS: Number of Wholesalers	WHOLESALERS: Motor Vehicles per Wholesaler	DEALERS: Passenger Car Dealers	DEALERS: Truck Dealers	DEALERS: Car and Truck Dealers	DEALERS: Motor Vehicles per Car and Truck Dealer	REPAIR SHOPS: Independent Repair Shops	REPAIR SHOPS: Motor Vehicles per Repair Shop	RETAIL OUTLETS: All Retail Outlets	RETAIL OUTLETS: Motor Vehicles per Outlet
Alabama	1,015,375	180	5,641	513	398	562	1,807	850	1,195	1,412	719
Arizona	428,070	89	4,810	195	163	213	2,010	662	647	875	489
Arkansas	598,954	165	3,630	516	402	555	1,079	743	806	1,298	461
California	6,452,491	959	6,728	1,998	1,309	2,148	3,004	8,821	731	10,969	588
Colorado	729,400	113	6,455	443	319	462	1,579	1,148	635	1,610	453
Connecticut	932,003	126	7,397	495	341	561	1,661	1,164	801	1,725	540
Delaware	151,250	21	7,202	93	60	100	1,513	279	542	379	399
Dist. of Columbia	203,262	28	7,259	62	36	70	2,904	236	861	306	664
Florida	1,759,400	246	7,152	619	418	668	2,634	2,296	766	2,964	594
Georgia	1,258,426	214	5,880	777	530	778	1,618	1,135	1,109	1,913	658
Idaho	329,800	76	4,339	303	246	334	987	491	672	825	400
Illinois	3,403,000	543	6,267	2,281	1,628	2,602	1,308	5,304	586	8,406	405
Indiana	2,008,209	279	7,198	1,150	783	1,285	1,563	2,528	794	3,813	527
Iowa	1,185,225	245	4,838	1,189	903	1,297	914	1,699	698	2,996	396
Kansas	1,076,847	177	6,084	923	717	1,017	1,059	1,156	932	2,173	496
Kentucky	1,082,100	193	5,607	685	513	740	1,462	1,092	991	1,832	591
Louisiana	1,000,875	153	6,542	526	412	569	1,759	696	1,438	1,265	791
Maine	343,480	58	5,922	316	237	343	1,001	590	582	933	368
Maryland	992,066	109	9,102	419	259	449	2,210	1,168	854	1,611	616
Massachusetts	1,610,456	224	7,190	1,025	606	1,077	1,495	1,921	840	2,998	537
Michigan	3,113,331	353	8,820	1,586	1,004	1,670	1,864	4,024	774	5,694	547
Minnesota	1,380,279	196	7,421	1,293	1,002	1,372	1,006	2,143	644	3,515	393
Mississippi	628,000	125	5,024	573	428	625	1,005	462	1,359	1,087	578
Missouri	1,532,576	284	5,396	1,064	759	1,148	1,335	1,706	898	2,854	537
Montana	337,826	69	4,896	357	334	410	824	466	725	876	386
Nebraska	644,272	143	4,505	629	513	699	922	998	646	1,697	380
Nevada	133,703	27	4,952	87	73	97	1,378	172	777	269	497
New Hampshire	216,000	32	6,750	221	150	248	871	326	663	574	376
New Jersey	2,118,000	281	7,537	1,016	602	1,100	1,925	3,982	532	5,082	417
New Mexico	346,000	80	4,325	209	164	228	1,518	501	691	729	475
New York	4,768,369	539	8,847	2,461	1,520	2,657	1,795	8,142	586	10,799	442
North Carolina	1,488,710	253	5,884	859	556	904	1,647	1,486	1,002	2,390	623
North Dakota	307,456	56	5,490	451	407	506	608	373	824	879	350
Ohio	3,634,766	470	7,734	1,978	1,259	2,133	1,704	4,167	872	6,300	577
Oklahoma	1,039,114	227	4,578	759	575	817	1,272	1,086	957	1,903	546
Oregon	821,200	198	4,147	486	370	523	1,570	1,290	637	1,813	453
Pennsylvania	3,985,176	611	6,522	2,704	1,684	2,959	1,347	7,124	559	10,083	395
Rhode Island	315,006	44	7,159	158	95	172	1,831	648	486	820	384
South Carolina	753,692	112	6,729	396	256	421	1,790	718	1,050	1,139	662
South Dakota	324,275	62	5,230	423	362	478	678	484	670	962	337
Tennessee	1,142,254	192	5,949	637	440	687	1,663	1,021	1,119	1,708	669
Texas	3,862,800	686	5,631	2,228	1,599	2,443	1,581	4,064	950	6,507	594
Utah	349,000	87	4,011	205	154	227	1,537	546	639	773	451
Vermont	141,516	22	6,433	156	121	164	863	256	553	420	337
Virginia	1,295,658	166	7,805	843	542	901	1,438	1,379	940	2,280	568
Washington	1,190,450	237	5,023	610	483	679	1,753	2,087	570	2,766	430
West Virginia	558,809	110	5,080	507	371	556	1,005	801	698	1,357	412
Wisconsin	1,439,000	197	7,305	1,420	1,122	1,568	918	1,553	927	3,121	461
Wyoming	172,794	37	4,670	199	149	209	827	260	665	469	368
Total	64,600,721	10,084	6,406	39,073	27,384	42,431	1,522	86,738	745	129,169	500

• DISTRIBUTION OUTLETS •

The data listed below are presented as a matter of record. They are from final reports for the year 1954 and are the result of the census conducted by the U. S. Bureau of the Census. Additional material is available pertaining to other types of Automotive Wholesalers, Retailers and Service Establishments and for Metropolitan and County areas.

Census of Wholesalers and Retailers, by Regions

As reported by the Bureau of the Census for the Year 1954

Region	AUTOMOTIVE WHOLESALERS*		FRANCHISED CAR DEALERS		GENERAL AUTO REPAIR SHOPS		GASOLINE SERVICE STATIONS	
	Establishments	Sales ($1,000)	Establishments	Sales ($1,000)	Establishments	Receipts ($1,000)	Establishments	Sales ($1,000)
New England	615	$141,208	2,610	$1,529,519	2,803	$58,658	10,315	$572,362
Middle Atlantic	2,013	501,013	6,560	4,455,057	8,451	166,754	27,711	1,599,754
South Atlantic	1,609	373,640	5,046	3,055,039	6,844	120,081	26,165	1,439,628
East North Central	2,509	567,433	8,849	5,865,110	9,525	175,322	35,950	2,372,728
East South Central	820	159,236	2,595	1,363,584	2,873	46,480	10,812	594,351
West North Central	1,343	321,533	5,945	2,555,584	6,591	89,979	21,741	1,134,820
West South Central	1,488	302,445	4,364	2,448,089	6,692	105,605	20,038	1,057,175
Mountain	620	136,721	2,058	995,787	2,510	42,583	8,366	521,422
Pacific	1,753	386,955	3,380	2,840,215	7,449	157,264	20,649	1,451,572
Total	12,770	$2,890,184	41,407	$25,107,984	53,738	$962,726	181,747	$10,743,812

Census of Automotive Wholesale and Retail Establishments, by States
With Number of Establishments and Their Sales Volume

As reported by the Bureau of the Census for the Year 1954

State	WHOLESALERS*		FRANCHISED CAR DEALERS		GENERAL AUTO REPAIR SHOPS		GASOLINE SERVICE STATIONS	
	Number	Sales ($1,000)	Number	Sales ($1,000)	Number	Receipts ($1,000)	Number	Sales ($1,000)
Alabama	211	$39,516	559	$335,610	798	$11,735	2,938	$145,484
Arizona	111	26,790	200	125,334	458	7,418	1,315	89,485
Arkansas	160	21,660	537	224,168	674	8,699	2,102	91,765
California	1,266	284,961	2,183	2,172,756	5,528	123,522	14,768	1,111,102
Colorado	137	30,986	460	261,234	678	11,447	2,026	124,906
Connecticut	138	26,726	541	375,695	535	13,411	2,331	142,899
Delaware	25	N.A.	91	68,410	129	2,242	475	27,465
District of Columbia	40	N.A.	79	142,353	153	5,951	422	55,627
Florida	369	70,219	692	597,207	1,238	23,103	4,715	268,713
Georgia	264	95,304	805	457,527	1,134	18,671	4,113	222,455
Idaho	71	9,449	300	116,813	237	3,542	929	51,563
Illinois	716	164,459	2,296	1,578,036	2,748	58,672	8,920	605,189
Indiana	340	75,242	1,295	744,593	1,277	18,851	5,188	320,660
Iowa	245	52,816	1,290	479,690	1,361	16,685	4,493	222,053
Kansas	212	37,021	937	400,267	1,151	14,353	3,438	173,915
Kentucky	184	31,667	765	350,587	771	14,041	2,641	144,033
Louisiana	195	50,915	529	365,097	757	14,333	2,544	161,923
Maine	60	13,072	341	141,965	454	7,323	1,212	60,655
Maryland	139	33,332	450	361,624	708	13,256	2,302	162,677
Massachusetts	296	76,617	1,125	737,642	1,151	24,861	4,467	257,965
Michigan	536	136,508	1,671	1,472,605	1,564	33,617	8,170	569,253
Minnesota	230	65,398	1,208	513,946	1,034	16,440	4,230	220,560
Mississippi	153	24,640	548	234,199	405	6,209	1,837	103,504
Missouri	394	102,102	1,157	672,435	1,726	25,907	5,534	300,858
Montana	81	23,329	356	140,782	264	4,277	934	55,584
Nebraska	150	30,132	640	252,362	748	9,519	2,148	125,916
Nevada	28	N.A.	81	43,624	93	2,653	349	33,458
New Hampshire	41	N.A.	247	92,811	274	5,377	813	40,299
New Jersey	328	81,172	1,087	840,485	1,426	30,710	5,403	323,278
New Mexico	88	N.A.	257	117,041	390	6,278	1,232	67,632
New York	925	254,343	2,677	2,025,668	3,148	71,031	11,565	710,018
North Carolina	314	71,754	1,006	491,249	1,425	22,466	5,176	245,354
North Dakota	55	N.A.	351	119,530	240	2,865	858	42,292
Ohio	681	146,229	2,138	1,478,306	2,871	47,043	8,756	616,977
Oklahoma	248	54,847	803	346,643	1,166	15,216	3,400	160,388
Oregon	213	44,416	520	296,354	796	14,828	2,525	142,574
Pennsylvania	760	165,498	2,796	1,588,904	3,877	65,013	10,743	566,458
Rhode Island	59	11,197	181	116,620	209	4,424	958	45,918
South Carolina	140	19,427	479	224,088	679	9,879	2,684	127,415
South Dakota	57	N.A.	362	117,354	331	4,210	1,040	49,226
Tennessee	272	63,413	723	443,188	899	14,495	3,396	201,330
Texas	885	175,023	2,495	1,512,181	4,095	67,357	11,992	643,099
Utah	71	15,620	206	116,106	264	4,909	1,003	64,419
Vermont	21	N.A.	175	64,786	180	3,262	534	24,626
Virginia	183	43,180	906	492,581	950	18,650	4,036	231,816
Washington	274	57,578	677	371,105	1,125	18,914	3,356	196,896
West Virginia	135	18,545	538	220,000	428	5,863	2,242	98,106
Wisconsin	236	44,995	1,449	591,570	1,065	17,139	4,916	260,649
Wyoming	78	N.A.	198	74,853	126	2,059	577	34,375
Total	12,770	$2,890,184	41,407	$25,107,984	53,738	$962,726	181,747	$10,743,812

*—These are jobbers of automotive parts, accessories, garage equipment and tools. Their numbers and sales volume were obtained by subtracting tire and tube wholesalers from automotive equipment totals. N.A.—Not available because sales volume of tire and tube wholesalers was withheld to avoid disclosure.

U. S. Motor Vehicle Registrations, 1900-1956

These data do not include publicly owned vehicles of which there were approximately 740,000 in 1955.

Year	PASSENGER CARS			TRUCKS AND BUSES			TOTAL VEHICLES	
	Units	Per Cent of Total	Per Cent Increase	Units	Per Cent of Total	Per Cent Increase	Units	Per Cent Increase
1900	8,000	....	150	.....	....	....	8,000	150
1901	14,800	....	85	.....	....	....	14,800	85
1902	23,000	....	55	.....	....	....	23,000	55
1903	32,920	....	43	.....	....	....	32,920	43
1904	54,590	98.7	66	700	1.3	100	55,290	68
1905	77,400	98.2	42	1,400	1.8	100	78,800	42
1906	105,900	98.0	37	2,200	2.0	57	108,100	37
1907	140,300	98.0	33	2,900	2.0	32	143,200	32
1908	194,400	98.0	38	4,000	2.0	38	198,400	38
1909	305,950	98.1	57	6,050	1.9	51	312,000	57
1910	458,377	97.8	50	10,123	2.2	65	468,500	50
1911	618,727	96.8	35	20,773	3.2	105	639,500	36
1912	901,596	95.5	46	42,404	4.5	104	944,000	48
1913	1,190,393	94.6	32	67,667	5.4	60	1,258,060	33
1914	1,664,002	94.4	36	99,015	5.6	46	1,763,018	40
1915	2,332,426	93.6	42	158,506	6.4	60	2,490,932	41
1916	3,367,889	93.1	43	250,048	6.9	58	3,617,937	45
1917	4,727,468	92.4	42	391,057	7.6	56	5,118,525	41
1918	5,554,952	90.2	21	605,496	9.8	55	6,160,448	20
1919	6,679,133	88.2	21	897,755	11.8	48	7,576,888	23
1920	8,131,522	88.0	22	1,107,639	12.0	23	9,239,161	22
1921	9,212,158	87.8	14	1,281,508	12.2	16	10,493,666	11
1922	10,704,076	87.2	16	1,569,523	12.8	22	12,273,599	17
1923	13,253,019	87.8	24	1,849,086	12.2	18	15,102,105	23
1924	15,436,102	87.6	15	2,176,838	12.4	18	17,612,940	17
1925	17,439,701	87.5	13	2,501,023	12.5	15	19,940,724	13
1926	19,220,885	87.3	10	2,831,674	12.7	13	22,052,559	11
1927	20,142,120	87.2	5	2,997,439	12.8	6	23,139,559	5
1928	21,308,159	87.1	6	3,203,524	12.9	7	24,511,683	6
1929	23,060,421	87.1	8	3,442,087	12.9	7	26,502,508	8
1930	22,972,745	86.7	—0.4	3,559,254	13.3	3.4	26,531,999	0.1
1931	22,420,629	86.3	—2.4	3,573,267	13.7	0.4	25,993,896	—2.0
1932	20,994,092	86.2	—6.4	3,347,730	13.8	—6.3	24,341,822	—6.4
1933	20,557,493	86.2	—2.1	3,292,439	13.8	—1.7	23,849,932	—2.0
1934	21,535,199	86.6	4.7	3,346,268	13.4	1.6	24,881,467	4.3
1935	22,513,715	86.1	4.5	3,644,997	13.9	8.9	26,158,712	5.1
1936	24,044,432	85.6	6.8	4,047,277	14.4	11.0	28,091,709	7.4
1937	25,356,786	85.5	5.5	4,292,484	14.5	6.1	29,649,270	5.5
1938	25,264,589	85.5	—0.4	4,283,395	14.5	—0.2	29,547,984	—0.3
1939	26,147,798	85.3	3.5	4,496,770	14.7	5.0	30,644,568	3.7
1940	27,240,475	85.3	4.2	4,683,376	14.7	4.1	31,923,851	4.2
1941	29,240,417	85.6	7.3	4,911,990	14.4	4.9	34,152,407	7.0
1942	27,683,529	85.4	—5.3	4,741,298	14.6	—3.5	32,424,827	—5.1
1943	25,841,215	84.7	—6.7	4,657,882	15.3	—1.8	30,499,097	—6.0
1944	25,298,639	84.6	—2.1	4,611,966	15.4	—1.0	29,910,605	—1.9
1945	25,398,824	83.5	0.4	5,025,233	16.5	9.0	30,424,057	1.7
1946	27,834,543	83.6	9.6	5,858,813	17.4	16.6	33,693,356	10.7
1947	30,482,007	81.8	9.6	6,754,256	18.2	15.4	37,236,263	10.6
1948	33,011,780	81.5	8.3	7,490,343	18.5	11.0	40,502,123	8.9
1949	36,235,930	82.3	9.8	7,770,852	17.7	3.7	44,006,782	8.6
1950	39,952,969	82.8	10.2	8,318,721	17.2	7.0	48,271,690	9.7
1951	42,123,278	82.7	5.4	8,834,741	17.3	6.2	50,958,019	5.6
1952	43,323,355	82.6	2.8	9,131,021	17.4	3.4	52,454,376	2.9
1953	46,261,460	83.2	6.8	9,343,274	16.8	2.3	55,594,734	6.0
1954	48,174,447	83.0	4.2	9,875,683	17.0	5.7	58,050,130	4.4
1955	51,923,136	83.7	7.8	10,116,373	16.3	2.4	62,039,509	6.9
1956	54,126,857	83.8	4.2	10,473,864	16.2	3.5	64,600,721	4.1

— Denotes decrease. Sources: Public Roads Administration through 1930; 1931 to 1956 Automotive Industries count.

Total U. S. Motor Vehicle Registrations by Regions, 1953-1956

Zone	Region	1956 Units	1956 % of Total	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total
1	New England	3,558,461	5.51	3,428,877	5.53	3,337,755	5.58	3,081,960	5.54
2	Middle Atlantic	10,871,545	16.83	10,489,428	16.91	9,682,596	16.99	9,431,901	16.97
3	South Atlantic	8,461,273	13.10	8,028,473	12.94	7,315,802	12.60	6,984,961	12.56
4	East North Central	13,598,306	21.04	12,974,048	20.91	12,219,365	21.05	11,732,579	21.11
5	East South Central	3,867,729	5.99	3,694,606	5.96	3,480,110	6.00	3,254,395	5.85
6	West North Central	6,450,930	9.99	6,307,469	10.17	6,062,206	10.44	5,915,758	10.64
7	West South Central	6,501,473	10.06	6,333,989	10.21	5,886,343	10.14	5,565,118	10.01
8	Mountain	2,826,593	4.38	2,745,915	4.43	2,543,047	4.38	2,425,613	4.36
9	Pacific	8,464,141	13.10	8,036,704	12.94	7,442,906	12.82	7,202,449	12.96
	Total—United States	64,600,721	100.00	62,039,509	100.00	58,050,130	100.00	55,594,734	100.00

States in the various regions are: Zone 1: Conn., Me., Mass., N. H., R. I., Vt.—Zone 2: N. J., N. Y., Pa.—Zone 3: Del., D. of C., Fla., Ga., Md., N. C., S. C., Va., W. Va.—Zone 4: Ill., Ind., Mich., Ohio, Wis.—Zone 5: Ala., Ky., Miss., Tenn.—Zone 6: Iowa, Kan., Minn., Mo., Neb., N. D., S. D.—Zone 7: Ark., La., Okla., Tex.—Zone 8: Ariz., Colo., Ida., Mont., Nev., N. M., Utah, Wyo.—Zone 9: Cal., Ore., Wash.

Total U. S. Motor Vehicle Registrations by States, 1955-1956

As of the End of the Registration Year

These data do not include publicly owned vehicles of which there were approximately 740,000 in 1955

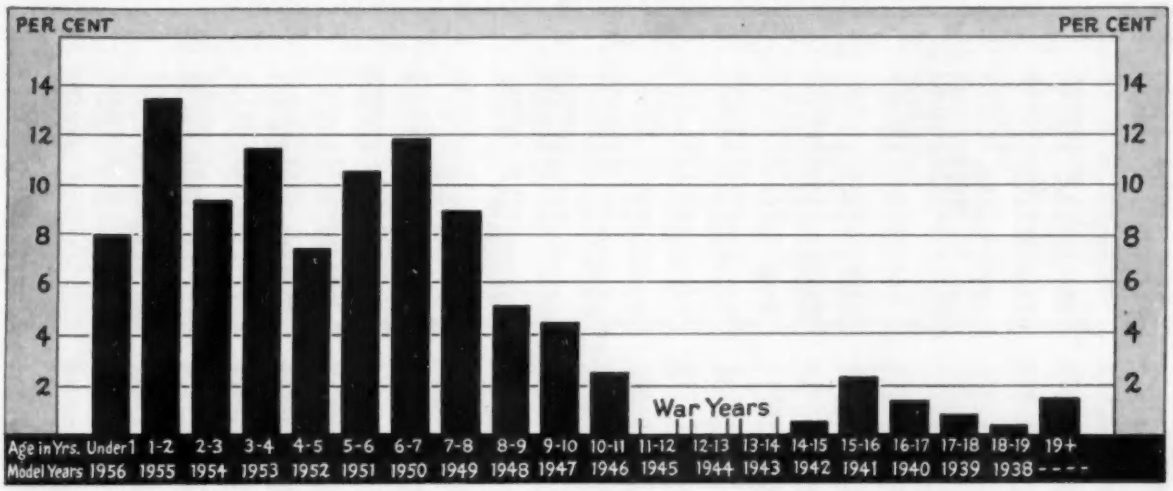
State	Passenger Cars[1] 1956	Passenger Cars[1] 1955	Trucks 1956	Trucks 1955	Buses 1956	Buses 1955	Total Motor Vehicles 1956	Total Motor Vehicles 1955	% of Total 1956	% of Total 1955
Alabama	822,269	760,277	191,754	185,087	1,352	1,350	1,015,375	946,714	1.57	1.52
Arizona	337,370	320,080	90,000	85,785	700	740	428,070	406,605	.66	.65
Arkansas	414,942	393,117	181,574	177,627	2,438	2,612	598,954	573,356	.93	.92
California	5,543,771	5,341,895	808,720	744,020	[2]	[2]	6,452,491	6,085,915	9.99	9.81
Colorado	571,500	564,390	157,900	163,266	[3]	[3]	729,400	727,656	1.13	1.17
Connecticut	821,875	797,685	107,000	104,058	3,128	3,031	932,003	904,774	1.44	1.46
Delaware	118,031	111,910	33,219	29,211	[2]	[2]	151,250	141,121	.23	.23
Dist. of Columbia	181,000	176,739	19,400	19,387	2,862	2,145	203,262	198,271	.31	.32
Florida	1,501,117	1,366,679	252,783	231,807	5,500	5,766	1,759,400	1,604,252	2.72	2.58
Georgia	1,014,507	985,582	240,544	236,753	3,375	3,413	1,258,426	1,225,748	1.95	1.97
Idaho	243,300	241,097	86,500	87,471	[3]	[3]	329,800	328,568	.51	.53
Illinois	2,980,000	2,851,852	412,000	378,240	11,000	10,872	3,403,000	3,240,964	5.27	5.22
Indiana	1,602,143	1,459,846	399,434	304,457	6,632	9,057	2,008,209	1,773,360	3.11	2.85
Iowa	970,635	966,649	214,590	211,768	[2]	[2]	1,185,225	1,178,417	1.83	1.90
Kansas	813,555	795,665	262,952	251,188	340	[2]	1,076,847	1,046,853	1.67	1.68
Kentucky	870,800	821,262	209,800	209,891	1,500	1,542	1,082,100	1,032,695	1.67	1.66
Louisiana	799,989	752,323	196,573	194,964	4,313	4,230	1,000,875	951,517	1.55	1.53
Maine	271,725	253,180	71,440	74,396	315	315	343,480	327,891	.53	.53
Maryland	852,427	805,987	133,884	129,220	5,755	5,483	992,066	939,790	1.54	1.51
Massachusetts	1,425,422	1,257,887	179,294	174,166	5,740	5,536	1,610,456	1,537,589	2.49	2.47
Michigan	2,732,558	2,716,713	380,773	372,645	[2]	[2]	3,113,331	3,089,358	4.83	4.97
Minnesota	1,138,056	1,096,933	237,307	229,691	4,916	4,367	1,380,279	1,330,991	2.14	2.14
Mississippi	447,553	417,908	174,544	169,223	5,903	6,413	628,000	593,544	.97	.96
Missouri	1,219,376	1,172,477	308,800	301,306	4,400	4,376	1,532,576	1,478,159	2.37	2.38
Montana	237,825	229,435	100,001	100,524	[2]	[2]	337,826	329,959	.52	.53
Nebraska	500,559	503,833	143,221	145,516	492	375	644,272	650,224	1.00	1.05
Nevada	104,880	93,778	28,823	26,488	[3]	[3]	133,703	120,266	.21	.34
New Hampshire	183,000	172,085	33,000	43,792	[2]	[2]	216,000	215,877	.33	.35
New Jersey	1,860,000	1,790,270	248,000	239,906	10,000	10,109	2,118,000	2,040,285	3.28	3.28
New Mexico	260,000	249,688	84,000	82,014	2,000	2,156[4]	346,000	333,858	.54	.54
New York	4,250,000	4,098,613	500,000	496,848	18,369	17,240	4,768,369	4,612,701	7.38	7.42
North Carolina	1,208,478	1,159,715	276,372	266,270	3,860	1,579	1,488,710	1,427,564	2.30	2.30
North Dakota	209,232	208,105	98,176	94,564	48	59	307,456	302,728	.48	.49
Ohio	3,226,406	3,108,162	405,064	397,122	3,296	3,967	3,634,766	3,509,251	5.63	5.65
Oklahoma	790,478	760,675	247,619	250,708	1,017	1,384	1,039,114	1,012,767	1.61	1.63
Oregon	745,000	735,947	75,000	78,167	1,200	1,289	821,200	815,403	1.27	1.31
Pennsylvania	3,370,000	3,240,442	603,000	588,465	12,176	7,535	3,985,176	3,836,442	6.17	6.17
Rhode Island	277,000	269,208	37,400	36,634	606	650	315,006	306,492	.49	.49
South Carolina	619,500	614,424	128,297	123,679	5,895	6,558	753,692	744,661	1.17	1.20
South Dakota	240,000	237,019	84,000	82,807	275	271	324,275	320,097	.50	.52
Tennessee	925,204	908,178	215,000	210,711	2,050	2,764	1,142,254	1,121,653	1.77	1.81
Texas	3,100,000	3,023,114	759,000	769,158	3,800	4,077	3,862,800	3,796,349	5.98	6.11
Utah	284,000	268,015	64,500	60,553	500	612	349,000	329,280	.54	.53
Vermont	125,800	120,969	15,600	15,170	116	115	141,516	136,254	.22	.22
Virginia	1,075,906	1,014,354	217,398	208,344	2,354	2,373	1,295,658	1,226,071	2.01	1.97
Washington	975,050	928,024	213,000	205,007	2,400	2,355	1,190,450	1,135,386	1.84	1.83
West Virginia	444,000	409,089	114,000	110,957	809	949	558,809	520,995	.86	.84
Wisconsin	1,200,000	1,133,665	235,000	224,053	4,000	3,397	1,439,000	1,361,115	2.23	2.19
Wyoming	120,618	118,596	52,176	51,127	[3]	[3]	172,794	169,723	.27	.27
Total	54,126,857	51,923,136	10,328,432	9,974,811	145,432	141,562	64,600,721	62,039,509	100.00	100.00

[1]—Includes taxicabs. [2]—Included with trucks. [3]—Included with passenger cars.

Note: In the above tabulation we have endeavored to make as accurate a count as existing conditions permit. This census is compiled from material secured direct from the state motor vehicle commissioners. Wherever possible, duplications occasioned by transfers and non-resident registrations have been eliminated. Data are for the registration, even though this necessitates partial estimates, in the case of those states whose registration year ends February or March of the following year.

For Registrations of Taxicabs, Motorcycles and Trailers, see page 318

60% OF CARS IN USE ARE UNDER 6 YEARS OF AGE



Number and Per Cent of Cars in Use, by Age Groups*

Age in Years	1956 Units	1956 % of Total Simple	1956 % of Total Cumul.	1955 Units	1955 % of Total Simple	1955 % of Total Cumul.	1954 Units	1954 % of Total Simple	1954 % of Total Cumul.	1953 Units	1953 % of Total Simple	1953 % of Total Cumul.
Under 1	3,963,476	7.97	7.97	4,135,548	8.78	8.78	2,620,354	5.91	5.91	2,900,616	6.89	6.89
1-2	6,700,917	13.48	21.45	4,859,042	9.72	18.50	5,717,341	12.91	18.82	3,720,053	8.84	15.73
2-3	4,582,918	9.22	30.67	5,723,459	12.15	30.65	3,698,425	8.35	27.17	5,461,553	12.97	28.70
3-4	5,700,487	11.47	42.14	3,674,973	7.80	38.45	5,443,347	12.29	39.46	6,219,450	14.77	43.47
4-5	3,638,120	7.32	49.46	5,386,532	11.43	49.88	6,179,050	13.95	53.41	4,965,804	11.80	55.27
5-6	5,290,075	10.64	60.10	6,102,453	12.95	62.83	4,895,498	11.06	64.47	2,931,654	6.96	62.23
6-7	5,913,977	11.90	72.00	4,772,516	10.13	72.96	2,884,520	6.51	70.98	2,913,754	6.92	69.15
7-8	4,434,174	8.92	80.92	2,765,944	5.87	78.83	2,821,467	6.37	77.35	1,903,101	4.52	73.67
8-9	2,466,246	4.96	85.88	2,607,579	5.53	84.36	1,822,273	4.11	81.46	.....	....	....
9-10	2,162,001	4.35	90.23	1,623,817	3.45	87.81	.....	....	....	.....	....	....
10-11	1,277,475	2.57	92.80	.....	....	....	.....	....	....	.....	....	....
11-12	.....	....	....	.....	....	....	.....	....	....	798,847	1.90	75.57
12-13	.....	....	....	.....	....	....	640,324	1.45	82.91	3,095,153	7.35	82.92
13-14	.....	....	....	463,973	.98	88.79	2,461,832	5.56	88.47	2,189,599	5.20	88.12
14-15	294,056	.59	93.39	1,781,923	3.78	92.57	1,691,402	3.82	92.29	1,396,271	3.32	91.44
15-16	1,126,528	2.27	95.66	1,204,688	2.56	95.13	1,015,210	2.29	94.58	752,028	1.79	93.23
16-17	755,465	1.52	97.18	692,726	1.47	96.60	516,939	1.17	95.75	1,130,339	2.69	95.92
17-18	419,680	.84	98.02	343,653	.73	97.33	746,447	1.68	97.43	698,101	1.66	97.58
18-19	206,417	.42	98.44	481,076	1.02	98.35	444,275	1.00	98.43	294,296	.70	98.28
19 and older	774,202	1.56	....	773,168	1.65	....	698,642	1.57	....	724,766	1.72	....
Total	**49,706,214**	**100.00**	**100.00**	**47,122,890**	**100.00**	**100.00**	**44,301,346**	**100.00**	**100.00**	**42,095,385**	**100.00**	**100.00**
Age not known	97,763	....	....	255,080	....	....	85,767	....	....	106,964	....	....
Total in use	**49,803,977**	....	....	**47,377,970**	....	....	**44,387,113**	....	....	**42,202,349**	....	....
Average age of known models	**5.55 yrs.**			**5.85 yrs.**			**6.17 yrs.**			**6.51 yrs.**		

*—Based on data from The Reuben H. Donnelly Corp. as of July 1 of each year.

Number and Per Cent of Trucks in Use, by Age Groups*

Age in Years	1956 Units	1956 % of Total Simple	1956 % of Total Cumul.	1955 Units	1955 % of Total Simple	1955 % of Total Cumul.	1954 Units	1954 % of Total Simple	1954 % of Total Cumul.	1953 Units	1953 % of Total Simple	1953 % of Total Cumul.
Under 1	488,692	5.14	5.14	501,841	5.51	5.51	408,880	4.67	4.67	440,866	5.11	5.11
1-2	923,404	9.71	14.85	689,919	7.57	13.08	842,041	9.61	14.28	791,329	9.17	14.28
2-3	688,828	7.24	22.09	846,981	9.30	22.38	786,003	8.97	23.25	986,754	11.44	25.72
3-4	843,657	8.87	30.96	776,276	8.52	30.90	1,055,119	12.04	46.32	906,053	10.50	48.72
4-5	763,474	8.03	38.99	953,787	10.47	41.37	1,055,119	12.04	46.32	906,053	10.50	48.72
5-6	933,160	9.81	48.80	1,036,318	11.38	52.75	880,347	10.04	56.36	918,715	10.65	59.37
6-7	1,011,260	10.64	59.44	862,071	9.46	62.21	866,072	9.88	66.24	722,543	8.38	67.75
7-8	831,542	8.75	68.19	831,940	9.13	71.34	664,221	7.58	73.82	651,553	7.55	75.30
8-9	789,457	8.30	76.49	624,674	6.86	78.20	594,195	6.78	80.60	133,499	1.55	76.85
9-10	576,708	6.07	82.56	551,853	6.06	84.26	114,918	1.31	81.91	56,643	.66	77.51
10-11	501,353	5.27	87.83	107,019	1.17	85.43	46,618	.53	82.44	21,109	.24	77.75
11-12	96,535	1.02	88.85	42,315	.47	85.90	17,074	.19	82.63	192,213	2.23	79.98
12-13	38,548	.41	89.26	14,821	.16	86.06	168,562	1.92	84.55	415,142	4.81	84.79
13-14	14,041	.15	89.41	148,315	1.63	87.69	349,884	3.99	88.54	288,875	3.25	88.14
14-15	130,361	1.37	90.78	304,021	3.34	91.03	238,384	2.72	91.26	208,594	2.42	90.56
15-16	253,298	2.66	93.44	202,159	2.22	93.25	168,497	1.92	93.18	138,792	1.61	92.17
16-17	164,086	1.73	95.17	141,254	1.55	94.80	108,335	1.24	94.42	203,061	2.35	94.52
17-18	111,956	1.18	96.35	88,925	.97	95.77	154,414	1.76	96.18	158,761	1.84	96.36
18-19	69,447	.73	97.08	125,032	1.37	97.14	116,249	1.33	97.51	88,127	1.02	97.38
19 and older	278,134	2.92	....	260,754	2.86	....	218,076	2.49	....	225,362	2.72	....
Total	**9,507,941**	**100.00**	**100.00**	**9,111,280**	**100.00**	**100.00**	**8,764,408**	**100.00**	**100.00**	**8,626,423**	**100.00**	**100.00**
Age not known	36,141	....	....	51,164	....	....	36,000	....	....	66,151	....	....
Total in use	**9,544,082**	....	....	**9,162,444**	....	....	**8,800,408**	....	....	**8,692,574**	....	....
Average age of known models	**6.74 yrs.**			**6.71 yrs.**			**6.58 yrs.**			**6.59 yrs.**		

*—Based on data from The Reuben H. Donnelly Corp. as of July 1 of each year.

• TOTAL REGISTRATIONS •

• TOTAL REGISTRATIONS •

CARS IN USE BY MAKES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
BUICK	'56	5345	1689	1794	36374	2701	4946	1032	1544	9016	6297	1457	24194	10234	4856	3859	4593	4757	1193	4831	9826	25268	6435	2557	5705	1523
	'55	8888	3663	3720	78839	5304	9855	2084	3532	18099	10521	2445	51190	22816	9308	8266	8578	8132	2431	9596	17558	53938	11293	4266	14419	1931
	'54	4809	2101	2085	38168	3770	6671	1224	1759	11392	5933	1632	34193	14829	6680	5618	5082	5019	1554	7055	11709	30098	8051	2635	8394	1507
	'53	6642	2706	2755	37119	4275	7010	1406	1753	12889	7745	1848	35947	14798	6878	6152	6027	6230	1829	6382	12780	28212	9717	3095	9472	1706
	'52	3629	1811	1750	25757	3200	4271	856	1154	7792	4630	1442	20878	8903	4290	4033	3707	3716	1216	4681	7616	15003	5866	2077	5670	1210
	'51	4998	2272	2111	35644	4446	5774	1067	1472	9568	5953	1731	26389	11710	6227	5159	5098	4503	1674	4377	10108	16887	7520	2582	7534	1533
	'50	8718	3842	3379	61543	7858	9433	1622	2503	16150	9542	2569	39965	17849	10620	8165	8639	7778	2883	5965	18017	24749	12827	4287	12041	2359
	'49	3023	1600	1203	29606	3038	4955	753	1361	6945	3043	1182	17572	7787	4637	3337	4052	3027	1482	3737	8951	9976	4981	1564	5379	951
	'48	1771	1007	696	19781	1838	2975	537	734	3865	1872	696	9159	4541	2605	1847	2416	1490	1000	2890	5412	6600	3110	901	3101	588
	'47	1824	1069	734	19031	1911	3084	574	550	3821	1782	699	8511	4487	2444	1852	2698	1443	1095	1930	5718	4903	2911	994	2939	500
	'46	967	609	359	10001	931	1478	309	247	1906	859	369	3639	1945	1237	870	1268	741	562	720	2678	2104	1382	464	1372	294
	'45-'42	207	175	71	2955	218	288	80	33	353	203	125	601	364	247	188	253	166	105	374	407	313	329	139	288	99
	'41	973	676	348	14949	1182	1927	423	231	1840	943	492	2920	1651	1106	1064	1129	702	500	999	2676	1615	1502	502	1353	280
	'40	672	415	237	10222	759	1678	329	179	1407	663	313	2241	1218	887	696	777	429	592	933	2418	1338	1193	325	1020	201
	'39	311	192	122	4422	341	891	148	93	586	302	107	1047	525	452	319	388	198	269	425	1017	558	639	199	497	99
	'38	140	145	54	3424	251	566	93	72	410	149	78	791	328	303	202	183	99	203	239	662	364	403	82	270	85
	Before '38	205	274	99	7193	590	1094	142	79	571	253	185	1141	793	593	405	377	129	351	438	1114	743	824	114	497	131
	Unid.*	67	261	16	145	9	90	387	40	317	204	30	446	115	48	36	58	106	8	578	56	355	30	57	126	6
	Total	53189	24509	21533	435173	42822	66986	13068	17336	109927	69894	17400	280624	124893	63216	52068	55321	48665	18944	56148	115524	223022	78813	26870	80077	14943
CADILLAC	'56	992	474	481	12551	855	1502	264	535	3510	1439	379	7380	2505	1024	902	730	1140	258	1023	2189	8437	1453	539	1563	452
	'55	1165	869	648	17798	1284	2229	382	697	5732	1802	448	10604	3331	1493	1318	966	1481	373	1430	3065	7501	1919	691	2461	463
	'54	810	629	396	13929	883	1530	257	460	4060	1130	310	6865	2152	930	815	686	1013	247	1165	2254	4224	1238	399	1590	298
	'53	1029	742	423	15251	1103	1801	342	496	4401	1332	423	7457	2323	1067	930	832	1078	285	963	2664	4320	1371	458	1668	385
	'52	870	715	349	14168	1003	1450	252	391	3581	1121	338	5608	1893	838	737	756	871	249	768	2128	3029	1165	330	1172	293
	'51	1171	814	417	17178	1207	1886	277	479	4165	1425	407	5929	2186	990	787	910	1083	329	927	2744	2993	1370	430	1461	342
	'50	1022	786	378	19613	1202	1865	238	457	3851	1248	345	5431	1772	964	754	841	1045	328	1009	2834	2308	1241	393	1423	282
	'49	971	647	357	15532	1081	1807	250	426	3722	1176	284	4526	1690	799	709	832	929	333	880	2604	2139	1105	354	1282	278
	'48	478	341	144	8075	497	1116	126	251	1993	602	145	2659	1007	387	303	482	453	206	633	1494	1205	539	197	683	99
	'47	510	378	158	7659	557	1194	132	281	2048	627	123	2426	1051	396	297	519	380	273	762	1747	1298	608	178	661	99
	'46	205	160	75	3639	247	556	65	112	920	280	43	933	390	167	127	250	169	116	164	769	449	257	72	271	44
	'45-'42	80	71	27	1476	84	167	26	35	239	97	21	243	95	58	41	63	65	41	47	216	126	104	35	100	13
	'41	299	294	90	6540	404	833	91	117	986	305	71	850	420	210	188	271	199	154	318	1112	485	354	102	401	48
	'40	88	96	20	2205	138	363	38	45	394	103	28	321	163	71	48	97	84	85	117	436	220	151	37	134	19
	'39	56	70	15	1457	81	237	34	27	185	88	17	211	94	59	36	58	24	48	71	277	127	86	19	60	22
	'38	11	29	11	771	37	115	8	18	81	25	6	84	43	30	22	22	16	29	25	109	69	35	8	42	11
	Before '38	34	83	13	1686	102	245	31	17	152	64	20	174	85	63	32	50	27	50	44	236	106	98	22	84	20
	Unid.*	9	79	4	52	7	37	87	35	94	58	6	110	25	10	8	6	8	2	433	18	63	7	10	50	2
	Total	9796	7247	4008	159582	10772	18933	2980	4879	40094	12922	3414	61773	21215	9556	8053	8371	10044	3406	10779	26896	39081	13099	4274	15104	3150
CHEVROLET	'56	21226	5502	8223	88219	9426	12434	2515	5428	32110	26729	3595	60373	27696	14811	13199	16280	19892	4152	16767	22608	64776	18060	10285	21607	4668
	'55	29470	9705	13962	131392	17222	19682	4907	7460	50606	36323	5763	106434	52000	29642	25883	23030	31191	7104	24839	39695	113301	30570	15515	44062	7284
	'54	20068	5857	9665	78271	11057	14862	3907	5177	30861	24250	3576	74114	31109	22244	17522	16294	24372	5232	20883	30188	62099	23904	11413	30842	4552
	'53	22114	7326	11489	101477	12680	17590	4862	5057	31427	27059	4856	80283	41160	24889	18553	20555	23026	6829	20453	33779	77035	28759	12189	33833	5562
	'52	14144	4833	7314	65452	8104	10727	2820	3374	18104	16853	3340	44632	24172	14797	12426	13548	14036	4361	13310	20299	39235	17437	8338	21544	3672
	'51	21351	7245	10606	100604	12710	16575	3476	3414	25370	24190	4791	63525	35920	23743	19144	21394	18606	6492	16736	31372	53324	26008	11299	33260	5430
	'50	25943	8267	12034	117294	15161	17821	3517	3811	28719	28080	5462	64516	39254	26479	21600	25432	21480	6941	19389	31879	54943	27920	12558	35566	5819
	'49	19718	6096	9376	86267	11266	12481	2529	2410	19685	19730	4583	45172	29532	21312	16721	21274	15231	5516	13710	23553	34740	21251	9574	27121	4242
	'48	14954	3527	6308	53586	8222	8166	1635	1256	11840	12909	2788	28948	19032	14815	11974	14538	9094	3718	8260	15246	21422	15262	7100	19210	2717
	'47	12494	3376	5522	46586	7760	6831	1308	923	10411	11184	2624	23580	15940	13656	11139	13443	7709	3268	6757	12923	16549	13742	6290	16394	2343
	'46	6691	1837	2958	28917	4113	3794	779	406	5751	5894	1432	11812	8085	6941	5815	7238	3770	1965	3661	6843	7636	7691	3377	8505	1185
	'45-'42	1879	847	861	12825	1441	1003	289	81	1689	1786	620	2735	2196	2331	2061	1951	1187	435	680	1438	1563	2530	1121	2476	389
	'41	8462	3284	3714	59218	8086	4694	1087	359	6669	7303	2454	10868	8100	8826	8990	8640	4104	1854	3410	7083	6179	10208	3789	11558	1674
	'40	5019	1881	2316	34521	3686	3534	734	224	4615	5024	1459	7628	5530	5838	5025	5410	2762	1587	2008	4859	4821	6965	2570	7879	1078
	'39	3121	1212	1599	20868	2548	2063	470	101	2375	3157	960	4648	3066	4630	3467	3255	1695	942	1070	2800	2871	4724	1441	5085	721
	'38	963	713	624	13576	1406	923	298	58	1091	960	506	2639	1747	2757	2360	1433	837	455	623	1045	1417	3512	653	2902	325
	Before '38	2611	1625	1253	36901	3623	2236	654	125	2656	2798	1348	5628	5059	5594	5106	3189	1496	1173	1546	2282	4505	7339	1433	5636	1189
	Unid.*	133	743	85	366	32	240	1434	62	899	950	62	984	378	140	193	218	302	32	1040	152	1218	172	341	746	25
	Total	230381	74075	107879	1077330	136543	155656	37223	39724	284878	254979	50119	635499	349876	243525	201178	217122	200790	61956	175140	288044	567634	266154	119286	328126	52875
CHRYSLER	'56	855	341	337	8114	858	1588	224	427	1645	938	358	5567	2204	1081	891	856	787	239	1118	2270	4418	1280	371	1007	439
	'55	1693	791	675	12724	1667	3218	351	757	4272	1855	663	11159	4571	2400	1838	1330	1549	545	1958	4179	8889	2668	811	2644	686
	'54	836	428	408	6343	1008	2162	244	597	2763	1041	317	7204	2619	1492	1106	788	1139	342	2204	2788	4530	1925	557	1601	391
	'53	1520	892	711	12875	1578	2964	398	748	4279	1707	600	11009	4538	2363	1760	1616	1696	677	2201	4784	7993	3023	942	2749	555
	'52	927	612	377	10090	1066	1526	191	460	2448	1004	455	5478	2429	1362	1176	877	951	384	1660	2263	3529	1759	579	1586	421
	'51	1345	858	600	16065	1801	2399	330	604	3649	1414	575	8422	3718	2333	1658	1478	1413	531	1938	3604	5301	3067	778	2622	604
	'50	1582	984	776	19154	2128	2681	346	614	4358	1792	647	10240	4424	2897	2057	1850	1643	714	2241	4769	6023	3883	921	3247	649
	'49	1287	778	610	13168	1666	2212	290	453	3447	1283	543	7932	3530	2435	1677	1776	1286	599	1380	3696	4419	3179	728	2769	564
	'48	1114	615	499	10118	1317	1466	218	524	2334	1197	444	5298	2454	1686	1329	1269	1095	474	1078	2902	3155	2188	681	1912	390
	'47	748	580	328	8636	1032	1192	218	230	1891	891	367	3696	1942	1382	1017	1051	684	364	659	2190	2242	1781	422	1435	330
	'46	450	329	200	6289	606	894	119	155	1197	552	233	2074	1215	741	609	636	361	225	576	1526	1059	986	293	812	214
	'45-'42	57	65	31	1697	97	168	37	11	157	57	47	250	143	85	55	97	64	24	77	164	99	155	42	91	41
	'41	272	402	130	9676	672	979	186	126	1005	346	204	1268	733	513	428	440	233	178	423	1151	707	857	134	597	299
	'40	160	175	80	4055	348	489	91	59	506	169	112	696	453	304	264	300	126	116	386	822	435	452	100	375	83
	'39	92	99	34	2541	173	206	51	21	230	88	38	336	199	149	129	140	66	59	162	323	154	220	42	166	56
	'38	31	54	18	1105	76	120	25	15	99	41	48	171	93	83	65	67	34	33	85	149	85	123	17	99	30
	Before '38	61	129	27	2619	231	235	48	19	199	70	82	362	325	233	155	162	55	96	123	262	236	326	38	173	96
	Unid.*	20	99	3	49	2	38	106	43	123	49	3	138	59	43	19	28	34	3	410	24	152	10	14	61	8
	Total	13158	9211	5804	145310	16123	24767	3503	6253	34607	14097	5756	81299	35647	21582	16135	14961	13190	5578	18632	37556	53426	27902	7380	23926	5746
DE SOTO	'56	550	231	244	5995	444	967	159	343	1409	756	262	4556	2107	770	613	550	657	273	1148	1871	4989	1314	313	1222	223
	'55	1028	483	550	9100	901	1594	269	679	2586	1156	448	6973	4146	1447	1197	971	1101	493	1917	3330	6721	2064	646	2826	364
	'54	590	296	324	5045	538	1217	187	452	2026	749	262	4849	2373	997	748	612	770	374	1273	2645	3815	1436	360	1661	264
	'53	1098	507	691	10516	944	1987	284	589	2774	1266	434	8568	4052	1764	1222	1157	1524	661	1677	4179	7025	2502	628	2881	417
	'52	738	476	506	8096	728	1312	190	431	1795	826	374	5474	2383	1213	912	689	1036	395	1398	2735	3575	1687	425	1818	294
	'51	813	448	510	9621	823	1607	210	356	2135	929	330	6366	2768	1528	1067	963	1085	470	1289	3408	4016	1989	488	2517	323
	'50	1139	634	805	13296	1224	2051	289	517	2825	1309	494	8272	3687	2054	1447	1306	1554	548	1208	4260	4964	2797	635	3065	440
	'49	906	546	477	11877	941	1697	244	375	2304	903	432	6507	2973	1505	1126	1098	829	462	1169	3552	3870	1833	403	2089	358
	'48	773	464	292	9356	632	1202	185	316	1620	975	320	4425	1825	1005	756	849	674	363	1374	2597	2669	1189	358	1435	216
	'47	452	430	188	8008	567	987	143	191	1344	560	244	2988	1454	803	575	652	409	332	701	2087	1650	943	195	966	175
	'46	322	282	125	5871	406	778	90	106	963	341	158	1772	946	511	421	504	252	190	313	1407	944	665	114	674	151
	'45-'42	49	76	22	1377	68	101	25	10	98	42	33	150	122	64	59	59	37	17	57	144	75	94	30	66	21
	'41	184	225	77	6361	289	578	94	77	518	193	140	746	478	239	222	230	139	118	250	741	386	392	66	387	84
	'40	152	131	88	3210	189	418	59	33	335	110	75	536	376	149	167	195	93	64	143	445	285	260	58	265	50
	'39	83	96	20	2068	117	234	34	14	185	70	51	225	195	84	77	87	46	46	73	250	130	149	21	194	19
	'38	21	44	15	1040	58	115	13	4	83	31	23	116	74	47	57	47	18	28	28	106	58	107	13	63	13
	Before '38	46	83	31	2241	135	192	38	13	119	44	39	252	243	110	119	121	34	58	58	173	158	195	26	143	36
	Unid.*	22	49	7	42	.....	19	76	19	58	38	7	88	26	5	10	11	18	4	193	13	110	7	11	46	4
	Total	8964	5001	4940	113142	9002	17066	2585	4525	23197	10300	4126	62663	30228	14295	10795	10101	10276	4936	14242	33943	45416	19623	4790	22318	3432

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

For Summary of Cars in Use by Makes, by Model Year, see page 112

STATES AND MODEL YEAR

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
BUICK	'56	2531	499	673	13361	1846	32868	6256	852	20901	3123	4311	25673	1294	3178	901	5319	19539	1720	684	6161	4356	2224	6418	597	346011
	'55	5088	1236	1724	26863	3113	63540	11277	1506	47491	8841	6664	46919	2767	5541	1908	9884	38296	3015	1019	11536	9097	5412	15804	1294	700506
	'54	3580	745	1291	12537	1604	39626	6398	1148	29962	5933	3813	28245	2164	3150	1766	5673	21898	1944	805	6601	5386	3117	11644	1039	422037
	'53	3753	733	1298	13137	2149	42239	9420	1431	30559	5940	3960	31079	1894	4139	1606	7338	24273	2005	975	7586	5520	3785	11579	1150	452919
	'52	2542	532	812	8907	1361	25787	5273	966	18517	3689	3115	18705	1118	2523	1112	4316	15050	1385	588	5071	4423	2342	7010	794	280896
	'51	3410	694	1114	12728	1726	34395	7081	1277	24167	4574	4341	23742	1619	3086	1585	5853	18508	1891	759	6533	6376	3220	9682	1013	365891
	'50	5506	1056	1678	21316	2665	54446	12406	1806	38003	7922	7162	36806	2856	5219	2586	9605	31426	3501	1284	10173	10650	5498	15360	1550	591785
	'49	2137	546	936	11489	928	27814	4389	694	18369	3493	3131	17070	1316	1927	986	3339	9802	1464	649	4497	5207	2758	6700	635	264448
	'48	1221	362	526	6888	515	15609	2427	394	10442	1880	2041	9876	932	1213	564	2048	5378	824	407	2623	3423	1665	3876	376	156944
	'47	1209	410	521	7910	524	15270	2787	394	9811	1844	2285	9736	964	1227	552	2029	5057	882	355	2633	3677	1903	3574	326	153384
	'46	588	179	248	4302	235	6997	1331	216	4320	894	1251	4397	485	603	273	994	2309	445	211	1234	2028	972	1726	148	73897
	'45-'42	164	67	30	733	56	852	267	67	547	218	347	642	93	125	49	222	640	135	23	236	601	188	290	34	15197
	'41	686	296	268	4336	253	5679	1533	188	3139	906	1601	4296	440	849	249	952	2141	584	164	1234	2812	908	1709	210	77398
	'40	461	178	278	3739	155	5377	1069	141	2483	637	883	3877	451	655	178	552	1190	326	192	845	1548	718	1294	131	58500
	'39	225	67	137	1782	58	2494	445	69	1112	362	387	1783	226	269	97	283	549	130	114	425	706	342	646	70	26923
	'38	152	49	72	1331	42	1714	301	38	709	219	243	1257	111	158	63	133	354	95	70	275	409	179	430	51	18022
	Before '38	361	126	184	2129	72	2748	386	92	1430	469	509	2502	251	237	116	202	632	166	141	393	951	251	767	108	33556
	Unid.*	27	11	7	82	110	218	10	7	122	64	13	352	13	12	10	178	352	3	.....	75	66	2	7	4	5334
	Total	33641	7786	11997	153570	17412	377673	73056	11288	262084	51008	46057	266959	18994	34111	14601	58920	197394	20516	8440	68131	67236	35484	98096	9532	4043248
CADILLAC	'56	477	222	170	3985	596	10930	1362	209	5317	779	1058	5500	431	567	179	942	4935	423	132	1272	864	350	1407	179	94852
	'55	711	449	302	3851	587	13458	1741	257	7428	1696	1304	7588	745	749	303	1376	7690	602	141	1793	1456	642	2160	246	127205
	'54	442	342	205	2559	367	8725	1241	149	5209	1150	846	5122	524	540	197	901	5064	466	112	1209	1105	434	1575	172	86926
	'53	485	426	224	3245	480	9752	1583	195	5870	1064	1090	5600	421	748	198	1202	5416	595	112	1438	1592	525	1793	218	97374
	'52	429	337	185	2875	410	7484	1327	163	4722	940	954	4453	422	650	181	1033	4394	606	102	1185	1478	471	1414	202	80472
	'51	466	445	251	3756	466	8887	1775	149	5548	1137	1119	5049	609	887	220	1293	5379	720	108	1350	1840	540	1784	216	95901
	'50	417	457	235	3593	459	8151	1561	105	4901	1014	1175	5166	544	743	205	957	5150	638	116	1273	2049	541	1657	176	92893
	'49	382	344	216	3421	348	7348	1488	126	4484	915	927	4271	519	830	183	935	3875	525	123	1137	1704	493	1424	156	80888
	'48	161	178	108	2202	137	4544	676	48	2577	472	476	2424	276	341	81	493	1655	226	77	614	868	281	902	68	43998
	'47	178	213	129	2489	145	5072	744	41	2586	446	414	2580	313	359	63	524	1519	191	63	624	797	310	816	71	45031
	'46	72	102	71	1144	72	2139	291	7	1084	220	207	1016	120	179	22	222	705	96	38	251	427	157	317	20	19450
	'45-'42	26	33	15	366	30	531	119	3	274	43	77	324	44	68	5	88	196	32	7	98	186	36	99	4	6254
	'41	85	157	68	1418	83	2135	410	19	1031	278	349	1358	196	266	30	251	777	139	46	350	638	168	379	33	25774
	'40	26	57	45	616	39	931	159	5	426	114	123	543	82	71	14	131	290	47	27	131	201	81	165	12	9797
	'39	19	42	32	440	24	563	85	4	248	69	86	350	58	71	12	57	137	38	22	68	116	46	75	4	6121
	'38	18	15	14	186	11	236	43	2	93	31	44	157	21	25	3	12	48	17	9	29	62	18	31	6	2768
	Before '38	29	37	18	388	18	512	69	4	259	55	80	389	43	40	11	35	95	37	32	63	164	37	73	10	6020
	Unid.*	3	1	2	26	17	75	2	.....	23	9	1	90	5	1	5	19	106	.....	.....	3	13	1	1	1	1624
	Total	4426	3857	2290	36340	4269	91473	14686	1488	52090	10432	10330	51960	5371	7135	1912	10451	47431	5396	1267	12888	15558	5131	16072	1794	923357
CHEVROLET	'56	7255	1142	2786	30186	6542	66868	20091	3088	55109	10508	12235	58964	3067	11153	2861	18126	66907	3885	2117	19039	12140	6670	15579	1990	967887
	'55	12452	2503	5469	52566	8681	119700	33311	6030	94891	25253	18790	91744	7231	18037	5329	29334	118434	6050	3540	29564	21686	13905	30522	3684	1636048
	'54	11433	1396	4308	33519	5321	87449	23889	4430	59313	20462	10091	67801	4765	13174	5542	21507	78048	4097	2480	20713	13314	8885	24248	2560	1110664
	'53	12762	1754	4576	39806	6083	94513	33144	5821	78043	19746	12685	83531	5784	17237	6045	22675	78894	5012	2905	25505	17641	12314	28019	2973	1290270
	'52	8746	1126	2764	24501	3791	57057	20514	3524	47263	12927	8161	50544	3754	10615	3676	14594	47128	3562	1881	16172	12427	8096	17518	1923	789930
	'51	12786	1685	3922	37119	5563	83127	30818	5445	70103	17983	13735	72405	6126	16785	5721	21661	68114	5229	2722	23967	19861	12008	27577	2678	1163727
	'50	14304	1801	4435	39483	6149	87770	35472	5489	77438	22112	15419	77124	6595	20227	6289	25678	79187	6118	2771	26060	23479	14246	29861	3026	1290311
	'49	10725	1326	3311	30383	4673	62564	25537	4569	55031	16190	12102	55279	5131	16203	4848	19891	53887	4552	2079	19644	18275	11711	23167	2211	946388
	'48	8507	796	2222	19672	3009	37720	17796	3184	34612	11704	7341	36302	3131	11412	3689	14353	34475	2854	1341	13290	11118	8831	15698	1507	621091
	'47	8137	716	1804	17238	2800	29544	15784	3014	27998	10310	6925	28495	2830	10295	3825	12310	30505	2523	1121	10928	10475	7612	13501	1377	532619
	'46	4447	418	970	10425	1369	15771	8717	1607	13239	5437	4201	14525	1547	5643	2013	6230	16358	1433	569	5765	6176	4349	7034	689	285968
	'45-'42	1595	249	158	2601	531	2839	2378	567	2728	1734	1785	2672	478	1735	649	1775	5287	533	68	1463	2634	1018	2116	275	84302
	'41	6362	859	757	11634	1921	11739	11433	2122	11313	7714	7853	14620	1833	9082	2449	8350	20078	2158	414	6508	12167	4782	9054	937	364752
	'40	3509	534	724	8393	1068	9225	7242	1205	8316	4794	4256	10518	1263	6149	1395	4866	11342	1302	408	4152	6594	3222	6015	615	234078
	'39	2548	331	494	4433	695	4909	4736	819	4688	3112	2542	6118	794	3655	1097	3010	6438	767	242	2616	4151	1944	4005	429	143331
	'38	1571	248	241	2266	353	2543	2059	548	2467	1917	1449	3050	332	1411	637	1181	3720	427	177	1255	2107	810	2431	242	77161
	Before '38	3765	547	682	4742	706	5368	4350	1197	7279	3476	3358	8047	676	3367	1389	2522	7882	1022	375	3162	5942	2042	6163	552	185816
	Unid.*	155	15	22	180	350	421	27	9	372	265	29	1562	50	53	62	581	1492	.....	2	132	164	23	38	23	16952
	Total	131059	17444	38645	369147	59605	778927	297298	52662	650203	195644	143926	681301	55407	176233	57516	228644	728176	51534	25212	229935	200551	122268	262804	27662	1741695
CHRYSLER	'56	503	131	193	4671	470	11539	1265	264	4906	328	706	7215	404	449	186	756	2689	414	147	1451	837	544	1180	129	78970
	'55	1104	305	431	5964	681	17364	2601	538	9606	1281	1544	11657	816	812	384	1647	6390	687	333	2677	2100	1460	2860	370	147506
	'54	836	177	307	4596	444	13902	1280	343	5838	748	764	7284	497	486	405	948	3755	439	226	1689	1209	851	1824	233	94004
	'53	1306	373	496	6133	659	19527	2341	668	10741	1278	1418	11818	874	957	564	1671	6135	786	429	2688	2120	1418	2946	399	151910
	'52	854	238	252	2966	467	8429	1276	387	5797	946	1172	6033	414	520	317	914	3956	522	183	1539	1679	716	1786	324	85257
	'51	1312	340	321	4795	599	12926	1772	554	8956	1264	1777	9435	662	604	549	1409	5474	742	297	2284	2960	1180	2940	367	130736
	'50	1669	381	466	6142	552	15316	2049	672	10521	1647	2154	11326	911	737	621	1711	6458	879	305	2608	3559	1356	3781	414	157333
	'49	1373	245	337	5231	529	11769	1603	561	8698	1465	1622	9601	722	650	627	1635	4977	704	246	2134	2600	1341	2955	373	123905
	'48	1068	237	296	3817	363	8233	1071	365	5715	1134	1089	6561	481	551	433	1129	3418	511	207	1446	1962	1010	1991	278	88965
	'47	885	210	179	3139	281	6305	874	280	4498	884	1009	4993	402	383	350	785	2573	427	142	1111	1647	858	1629	155	69155
	'46	423	133	115	2398	166	4090	607	132	2712	496	779	3369	295	273	166	453	1442	251	69	758	1191	609	861	103	43886
	'45-'42	70	30	15	341	21	428	99	21	279	87	167	434	39	52	14	59	204	47	8	84	275	63	98	13	6704
	'41	288	170	75	2212	175	2839	573	77	1722	413	1051	2880	212	253	128	344	908	241	62	535	1579	409	708	105	39822
	'40	169	66	60	1313	66	1636	305	38	945	234	452	1664	139	147	76	206	442	124	58	274	646	257	376	45	20714
	'39	79	33	20	639	49	777	162	19	401	113	271	849	80	75	36	69	221	74	17	125	387	93	195	33	10597
	'38	61	18	14	340	14	483	71	10	221	58	121	441	26	33	20	32	115	33	10	87	195	45	115	11	5320
	Before '38	130	49	39	540	44	768	117	44	630	118	266	1031	68	58	47	59	231	82	37	108	463	125	290	24	11720
	Unid.*	14	2	5	58	38	144	.....	.....	81	24	1	110	9	5	6	44	91	.....	.....	15	52	.....	.....	3	2240
	Total	12144	3138	3621	55295	5618	136455	18066	4993	82257	12518	16363	96701	7051	7045	4909	13871	49480	6963	2767	21613	25461	12334	26535	3379	1296744
DE SOTO	'56	322	93	154	3906	297	8610	1073	181	4784	429	775	6875	206	406	127	690	1936	455	121	1208	733	460	1182	125	67095
	'55	695	226	342	5011	374	11378	1904	447	7958	1130	1445	8876	634	855	253	1391	3908	635	159	2104	1822	1006	2247	260	108050
	'54	407	140	228	3324	218	10103	1055	326	5275	770	741	5606	357	457	224	840	2088	293	133	1369	1100	552	1698	151	71316
	'53	685	257	378	4912	391	14747	2024	429	8360	1143	1411	10230	694	893	423	1513	4020	670	186	2000	1777	879	2572	274	120213
	'52	555	159	212	2956	344	8813	1361	302	5266	1041	1044	5686	391	595	313	941	3098	418	142	1349	1554	532	1861	198	78844
	'51	651	157	255	3507	310	10262	1415	355	6274	1148	1117	6920	503	591	371	1098	3327	484	173	1527	1787	669	2101	180	91221
	'50	858	242	282	4466	419	12923	1903	477	8199	1372	1605	9617	732	776	484	1730	4315	665	213	1959	2694	896	2856	266	120671
	'49	593	189	259	4113	262	10279	1368	336	6969	963	1493	8095	564	574	312	1062	2860	613	214	1667	2201	822	2498	214	97056
	'48	446	153	233	2863	268	7052	869	254	4768	726	934	5200	361	439	291	765	1910	373	143	1223	1670	687	1684	146	69328
	'47	342	136	150	2493	151	5487	715	128	3803	525	932	4289	311	342	180	544	1433	326	119	893	1482	547	1431	92	53895
	'46	253	84	108	1898	103	3501	541	94	2397	382	635	2928	185	238	108	382	975	267	79	640	1113	401	851	63	36528
	'45-'42	26	20	10	207	13	282	53	15	207	68	120	269	10	34	9	45	148	47	3	70	247	38	73	10	4920
	'41	123	118	62	1188	67	1319	258	52	1049	226	632	1511	107	142	43	188	459	209	45	301	1249	215	480	61	23278
	'40	54	51	47	936	35	1097	209	31	818	128	382	1310	88	68	43	147	257	118	37	213	611	144	357	23	15078
	'39	42	33	32	538	19	639	98	17	406	60	216	609	46	66	28	67	131	81	11	120	368	71	154	19	8459
	'38	29	16	18	217	20	270	38	12	191	44	85	338	16	21	11	24	68	29	12	60	149	37	77	6	4006
	Before '38	85	47	25	416	31	447	54	25	501	83	200	628	50	29	31	49	126	75	17	92	416	62	183	19	8394
	Unid.*	6	2	2	29	25	49	1	4	37	14	2	95	2	2	2	38	65	.....	.....	10	24	3	2	1	1296
	Total	6172	2123	2797	42984	3347	107258	14839	3485	67282	10252	13769	79280	5277	6526	3253	11512	31124	5758	1807	16605	20897	8001	22287	2106	979649

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

For Summary of Trucks in Use by Makes, by Model Year, see page 113

CARS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
DODGE	'56	1482	641	909	13325	1384	3018	490	726	3645	2427	715	8022	4276	2201	1490	1557	1531	668	2585	3829	9824	3009	876	1907	890
	'55	2997	1502	1720	22585	2422	4139	669	1224	6434	4300	1146	16601	8818	4361	3421	2950	3091	1144	3963	6529	19619	4771	1707	5380	1325
	'54	1774	806	960	10799	1502	3250	340	711	3699	2431	588	10310	5062	3046	2098	1905	1964	799	2469	4963	8302	2678	983	2691	825
	'53	3470	1528	1894	22090	2501	5666	958	1196	7221	4553	1058	19288	8305	4598	3615	3724	3574	1654	4515	9006	17225	5063	1802	6342	1148
	'52	2460	931	1477	16256	1948	3779	541	1213	5505	3280	736	14946	5624	3481	3037	2701	2845	1037	4012	6491	10190	4135	1339	4745	848
	'51	2740	1212	1633	20313	2341	4563	689	1343	6159	3523	1015	17630	6606	4787	3314	3280	2731	1253	4355	7576	11596	5086	1405	5227	1022
	'50	4129	1579	2166	24771	3611	5302	846	1704	7977	4773	1104	21091	8821	6436	4621	4013	4158	1622	4410	9855	13453	6964	1950	7406	1188
	'49	3139	1406	1656	22677	2656	4426	762	1210	6491	3533	1167	16795	7570	5733	3606	3805	3572	1365	3572	8409	10555	5276	1540	6002	1082
	'48	2455	999	1094	17719	1833	3426	613	948	4237	3059	691	11317	5015	3048	2375	2570	2469	1211	3857	6678	7176	3286	1201	4024	861
	'47	1617	966	873	17912	1782	3298	506	767	4237	2048	679	9601	4763	2888	2167	2614	1799	1132	2678	6028	5994	3111	822	3395	630
	'46	1099	590	582	12600	1071	2000	339	234	2583	1138	460	6153	2736	1687	1303	1602	1045	604	951	3354	3020	1954	461	2115	367
	'45-'42	257	214	139	4056	322	378	76	43	466	262	116	628	473	320	272	284	254	123	73	503	376	306	112	316	74
	'41	643	526	263	11851	891	1280	207	174	1533	611	322	1848	1215	947	874	766	502	370	658	2003	1458	983	246	1093	242
	'40	614	410	259	8957	703	1051	167	115	1208	616	264	1678	1162	795	643	734	496	346	633	1608	1193	906	260	1193	130
	'39	314	242	149	6833	486	646	110	82	626	329	143	853	534	561	386	416	271	175	285	870	567	545	111	680	88
	'38	130	118	56	3251	184	305	50	30	259	147	67	374	239	210	207	168	134	94	134	335	247	322	42	261	54
	Before '38	329	495	225	14055	972	1140	154	88	787	346	299	1524	1231	1016	855	682	282	341	417	1048	1141	1253	159	974	267
	Unid.*	30	163	14	103	7	57	191	46	191	141	11	325	72	41	29	35	48	5	533	45	257	25	30	133	12
	Total	29879	14232	16071	250053	26516	47724	7710	11855	63258	37497	10643	157904	72724	46153	34313	33806	30566	13943	40096	79130	122193	49673	15046	53884	10853
FORD	'56	17826	5880	6396	87849	8912	13759	2533	4604	32295	25554	3300	57180	28793	15215	13096	14229	18281	4117	15029	27805	65236	18065	9231	18338	5044
	'55	23728	8177	12454	110682	13528	17575	3765	5377	41513	32557	4406	81447	41502	23475	20972	18754	26168	4956	18306	35457	97416	27589	12577	37496	5619
	'54	17778	6118	10010	87720	10477	16576	2761	4385	29899	23779	3213	65785	32603	21584	18112	15914	19914	4268	20108	29941	76125	23106	9761	29454	4518
	'53	19187	6859	9439	102126	10822	16620	3531	4275	27904	23844	4279	69735	33547	20773	17774	17409	19713	4831	16637	31050	84705	24492	10500	29571	5059
	'52	10121	3867	5258	54585	6404	8213	1748	2403	15119	13194	2536	34784	17873	11000	10138	10241	9805	2870	9883	15972	38734	13354	5863	15410	2692
	'51	17837	5714	8449	80572	9708	11976	2597	2807	21642	22246	3719	44721	25921	18027	15130	17453	14928	4342	11881	23922	48948	20558	9810	22192	3849
	'50	23303	6624	10735	97268	11888	13134	2748	3103	25420	28499	4229	52411	29592	24452	18701	21620	18016	4992	14290	27582	53395	25687	12502	28156	4369
	'49	18946	5982	8353	83152	10372	10457	2455	2179	20771	21077	3986	42598	24402	22484	15734	19909	14199	4310	11332	22362	39301	21942	10341	22852	3668
	'48	4920	1241	2120	17880	2240	1947	471	404	4426	6414	854	7476	4465	4378	3391	3907	3764	1132	4604	4856	7228	4461	2976	4753	749
	'47	6059	1931	3082	30505	3529	3000	713	381	6403	8269	1496	9683	6835	6063	5235	6069	4711	1593	2682	7116	11026	6458	3862	6789	1165
	'46	7443	1900	3493	26364	3642	2917	720	300	6547	9261	1229	9071	5479	6312	5156	5606	5246	1801	1349	6942	8827	7562	5031	6520	1109
	'45-'42	1214	598	665	9861	1084	534	176	38	1579	1340	428	1476	948	1261	1041	1004	997	358	208	1130	1411	1565	861	1136	289
	'41	3945	1462	1968	25664	2557	2326	547	167	4064	5028	947	4221	2985	4274	3909	2902	2967	1004	719	4439	4329	6431	2801	4043	775
	'40	3177	893	1306	18671	2068	1563	328	135	3355	6115	631	3441	2418	3230	2631	2071	2066	786	584	3166	3672	4505	2036	2642	523
	'39	1293	484	620	10819	1153	894	182	69	1614	2180	367	1993	1281	2113	1471	1049	1145	343	352	1486	2070	2589	823	1440	281
	'38	340	210	201	5291	482	411	103	37	563	536	154	791	599	903	630	340	352	156	180	536	647	1333	249	577	124
	Before '38	3762	2639	2167	64634	4546	3588	614	223	6308	5800	1470	8713	6357	8498	7544	4110	2876	1794	1408	3793	9594	12633	2041	6214	1660
	Unid.*	153	687	82	311	42	177	786	53	730	965	45	750	356	154	109	172	262	18	672	297	1240	145	299	448	23
	Total	180732	61066	88800	913934	103454	125667	26778	30940	250152	236658	37289	496478	265956	194216	160774	162759	165410	43671	130224	247852	533904	222475	101564	239031	41516
FRAZER	'56																									
	'55																									
	'54																									
	'53																									
	'52																									
	'51	84	54	32	578	80	115	17	18	215	40	34	679	242	192	152	81	85	39	24	163	340	340	21	168	34
	'50	19	7	5	182	15	10	5	2	37	11	11	91	35	30	37	25	9	11	53	39	45	31	6	63	11
	'49	156	111	96	1106	160	97	52	23	357	121	113	1047	463	535	280	231	180	89	118	191	510	540	87	348	93
	'48	262	187	131	2438	334	238	83	39	610	156	203	1939	771	1073	620	353	294	83	238	383	896	767	127	560	164
	'47	231	206	115	3863	276	319	89	50	631	149	219	1208	512	464	399	325	181	107	154	506	610	488	98	422	122
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	Before '38																									
	Unid.*	10	14	3	157	5	6	3	24	31	13	9	37	55	16	8	15	11	3	205	11	36	3	13	11	2
	Total	742	581	382	8124	870	785	249	156	1881	487	589	5001	2078	2310	1496	1030	750	332	792	1293	2437	2169	352	1572	426
HENRY J	'56																									
	'55																									
	'54	9	6	9	92		10	5	5	62	32	3	29	19	6	19	19	15	18	24	39	31	8	5	15	1
	'53	207	137	91	791	63	225	19	58	681	250	30	439	386	102	221	156	230	194	216	553	671	118	91	111	29
	'52	363	241	210	1040	94	357	36	92	752	380	61	752	524	167	293	238	338	160	732	980	821	250	174	247	62
	'51	990	353	457	3530	430	1345	110	252	2394	1152	176	2507	1702	601	833	659	828	453	1135	1508	2405	921	511	915	189
	'50																									
	'49																									
	'48																									
	'47																									
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	Before '38																									
	Unid.*	38	16	8	117	10	19	3	2	78	56	1	36	42	17	5	28	15	5	126	29	67	3	28	16	2
	Total	1605	753	805	5570	597	1956	173	410	3967	1850	271	3763	2673	893	1371	1100	1428	830	2233	2789	3995	1300	807	1304	283
HUDSON	'56	210	86	82	1450	211	354	3	73	452	112	237	1379	531	240	208	123	76	188	283	783	976	355	55	71	254
	'55	436	274	295	3866	476	676	16	155	1409	219	310	5279	1292	655	583	327	242	280	902	1336	2007	794	154	401	311
	'54	395	195	205	2314	570	910	66	270	1043	292	235	5667	1660	712	725	402	226	314	1091	1613	2647	957	115	520	376
	'53	944	398	243	5520	699	1218	152	235	1401	581	410	6092	1942	710	848	599	440	355	1033	1697	3926	1139	280	817	444
	'52	779	454	276	6974	976	1114	179	309	1562	646	410	5496	1852	633	1112	652	436	358	1359	1483	3100	994	257	870	425
	'51	1169	814	561	11686	1877	1901	292	423	2725	1097	709	10368	3802	1756	1961	1217	765	588	1728	2990	6001	2336	403	1761	829
	'50	990	754	438	11994	1853	1292	213	394	2555	924	541	9466	3502	1756	1530	1241	737	526	1193	2709	5184	2933	320	1648	614
	'49	1281	916	691	12058	2507	1549	278	403	2916	1281	726	8286	3809	2481	2014	1756	1276	738	1392	2854	4486	3161	598	2732	755
	'48	756	527	337	8293	729	1085	188	175	1536	633	363	3015	1660	1071	1027	904	527	463	806	2099	2941	1335	309	1243	275
	'47	533	243	193	4647	362	588	116	91	939	433	238	1668	943	561	525	484	322	280	391	1259	1609	613	198	716	148
	'46	389	193	114	3967	309	464	112	79	813	276	181	1148	721	413	412	406	212	203	356	981	1059	453	136	464	136
	'45-'42	55	50	11	755	62	66	17	4	83	53	52	161	107	81	92	43	23	39	24	110	131	68	28	44	33
	'41	110	111	29	1982	138	192	29	18	274	96	87	329	255	185	177	83	41	116	86	289	367	153	29	150	48
	'40	77	57	24	1037	127	134	31	14	203	52	39	277	216	161	111	64	44	76	56	189	208	122	18	78	42
	'39	28	25	12	494	57	54	8	1	73	27	23	101	77	67	67	23	26	41	31	90	109	61	6	50	15
	'38	12	12	4	227	37	29	7	3	51	12	12	42	49	40	45	17	9	13	17	42	51	53	2	11	6
	Before '38	42	83	23	884	157	136	21	15	147	62	66	221	197	166	184	58	35	99	61	162	276	229	18	49	61
	Unid.*	9	47	4	33	3	18	52	15	60	30	9	106	31	17	13	7	17	5	87	6	105	11	7	29	2
	Total	7915	5219	3522	78181	11146	11990	1782	2677	17944	6826	4647	59101	22946	11704	11634	8408	5456	4680	10996	20692	35183	15767	2935	11654	4778

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

For Summary of Cars in Use by Makes, by Model Year, see page 112

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
DODGE	'56	911	194	444	7820	674	16830	2195	494	11312	954	1859	13417	526	1052	349	1781	5186	571	362	2537	2146	1355	2594	249	147229
	'55	1910	498	941	10056	1174	23563	4145	1088	19405	2587	3163	21560	1214	2167	904	3819	11336	1103	490	4709	4305	3555	5224	563	262297
	'54	1279	300	681	5968	686	18208	2477	648	11156	1439	1541	11471	820	1181	744	2232	6391	422	428	2784	2219	1606	3459	334	153409
	'53	1903	541	1164	10432	1203	33657	5153	963	20546	2536	2819	22406	1774	2434	1284	4621	14196	1144	837	4794	4024	2964	5806	563	289758
	'52	1634	316	696	8038	863	23939	3557	729	14146	2760	1989	15644	1086	1750	780	3317	10814	731	525	3921	2970	2209	4957	387	211157
	'51	2224	356	843	10474	943	28405	4073	871	17052	2797	2430	18694	1357	2040	1103	3377	11095	959	506	4448	4122	2718	6273	502	249285
	'50	2778	418	1018	13107	1193	34692	5532	998	21489	3701	3322	22883	1855	2749	1326	4611	16372	1243	612	5587	5326	3061	7440	656	315841
	'49	2486	332	917	10845	989	28043	4697	962	17626	3021	3253	19051	1583	2156	1242	3949	13551	1121	616	4737	5092	2639	6398	599	264013
	'48	1383	289	747	8589	548	19647	2715	555	11934	2028	1996	13425	1102	1451	859	2539	7278	638	470	3273	3338	2058	3960	321	183182
	'47	1285	292	611	8843	568	18799	2809	430	11491	1831	1975	13134	987	1265	774	2272	8908	740	329	3129	3285	2032	3740	305	170243
	'46	771	171	293	5795	332	10368	1775	261	6184	1135	1395	7586	639	801	421	1364	3925	506	188	1721	2305	1301	2313	178	100776
	'45-'42	183	58	43	907	94	1123	292	65	753	228	565	838	107	179	72	250	830	141	47	308	856	202	303	52	18939
	'41	452	159	152	3409	232	4286	873	147	2911	722	1292	3664	385	480	194	741	2034	314	100	1062	2495	656	1158	127	59551
	'40	410	126	169	2822	161	3446	883	109	2491	618	1003	3127	287	467	198	639	1934	284	115	811	1685	584	1007	91	49598
	'39	220	101	90	1642	93	1930	486	80	1147	376	540	1525	172	276	112	357	977	161	50	461	1044	251	573	65	29031
	'38	123	37	45	781	46	1013	174	42	538	169	242	825	69	109	63	119	420	73	29	249	413	154	276	27	13454
	Before '38	550	202	165	2346	169	2796	532	139	2569	684	1088	3454	247	391	209	420	1186	334	107	643	1982	575	1240	167	52266
	Unid.*	26	1	11	58	66	159	3	4	88	38	6	317	13	4	18	96	209			34	29	5	1	2	3730
	Total	20528	4381	9030	111912	10014	270904	42371	8585	172838	27624	30478	193021	14223	20952	10650	36504	114642	10685	5815	45208	47616	28135	58722	5177	2573739
FORD	'56	7456	1440	2432	38174	5869	73121	22867	3303	61500	8339	11927	62788	3488	10773	2598	16857	61033	3378	2292	20319	12987	7234	16122	1732	978318
	'55	11893	2347	4644	38268	6311	95210	30381	4917	84681	22082	14687	74642	5434	14752	5064	24398	89812	4620	2452	26571	18726	11523	26845	2586	1348362
	'54	11633	1738	3549	33748	4685	82823	24607	4431	66409	19842	10330	58169	4710	11943	5416	19486	70680	3471	2115	22642	15492	8321	26002	2135	1098286
	'53	11487	1972	3643	36443	5356	81385	29505	5114	71391	17935	12919	73976	5501	14447	4861	19646	72188	4494	2360	24106	19180	9947	24206	2444	1168988
	'52	7046	1032	2032	19489	2927	41330	16590	2829	36805	11882	7023	38197	2978	8705	2700	10675	38251	2874	1238	14046	10689	5394	13325	1328	621452
	'51	10729	1474	2782	27885	4265	60937	30649	4444	54983	15760	10225	52496	4962	15332	4557	18693	56351	4171	1805	21230	15818	9042	19462	1891	919092
	'50	13483	1577	3232	30575	4950	65926	39322	4916	61461	19989	12002	60545	5778	21948	5516	23398	71061	5082	1907	25446	19224	11606	24112	2237	1098029
	'49	11742	1439	2703	24175	4221	52551	29558	4657	48701	14664	10441	45101	4448	18583	5214	19881	53031	4438	1637	20181	17213	10290	20368	1987	890398
	'48	3431	295	655	4213	935	8953	6901	1046	8683	5894	2256	7439	800	4065	1381	4355	12698	848	431	4230	3893	2434	3340	413	190626
	'47	4546	560	826	7448	1354	14181	11531	1631	13815	6933	3506	12375	1057	6693	1878	6043	17830	1400	585	7015	6283	4184	5328	723	282602
	'46	4586	465	848	6987	1213	12020	10784	1778	11012	6213	3074	11589	1369	7072	2051	6242	17720	1284	506	5745	5227	3572	5536	681	267401
	'45-'42	886	190	115	1308	428	1566	1526	403	1601	1358	626	1358	195	884	363	1141	4053	536	85	1113	1990	451	961	172	54512
	'41	3623	432	451	4389	831	4415	6236	1511	5104	5008	2213	5368	782	4902	1423	3249	11407	970	226	3260	4121	1871	3937	486	170689
	'40	2642	316	422	2488	632	3356	7155	906	4412	3451	1626	3862	578	5744	1001	3002	8694	642	224	3025	2682	1330	2577	355	133145
	'39	1501	175	223	1336	262	1936	2516	489	2512	1905	793	2022	317	2208	579	1072	4259	360	114	1330	1298	676	1748	192	67912
	'38	709	105	84	623	107	842	606	212	884	751	325	844	111	583	244	304	1495	131	52	451	506	210	842	113	26879
	Before '38	6540	1083	925	5724	1179	7094	6614	3000	11408	6321	4055	10056	923	6970	2414	3132	12755	1455	600	4340	7571	2848	7860	1011	288864
	Unid.*	65	3	17	97	243	280	94	16	302	283	23	1320	33	61	25	435	893	4	16	127	139	22	21	13	13508
	Total	113998	16543	29585	263370	45788	607923	277644	45583	545664	168610	108063	522144	43464	155675	47285	182009	604231	40158	18845	205177	163049	90955	202590	20509	9619065
FRAZER	'56																									
	'55																									
	'54																									
	'53																									
	'52																									
	'51	52	12	21	307	30	807	101	18	600	33	141	699	40	30	49	61	208	57	15	82	219	85	268	23	7763
	'50	12	5	12	26	8	76	9	7	67	44	20	104	9	3	9	12	32	15	8	23	43	19	31	4	1385
	'49	178	29	24	413	64	845	205	116	856	133	238	993	73	71	207	163	428	110	26	213	390	152	538	34	13603
	'48	365	57	48	1019	123	1541	340	120	1352	284	473	1138	96	117	205	252	744	163	43	309	663	289	745	62	23487
	'47	333	99	53	1250	85	1682	387	113	1118	263	528	1027	99	139	176	199	563	150	32	331	785	249	493	60	21730
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	Before '38																									
	Unid.*	2	3	3	27	14	40	5		36	17	15	8	11	4	1	5	43			2	17	2	4	4	964
	Total	942	175	161	3042	324	4991	1047	374	4029	774	1415	3969	328	364	647	692	2018	495	124	960	2117	796	2077	187	68832
HENRY J	'56																									
	'55																									
	'54	2		2	28		81	8		40	6	3	44	11	4	4	7	10	2	28	3	13	17			794
	'53	107	13	70	505	41	1393	270	9	904	56	159	1146	100	164	20	253	508	42	62	363	148	142	151	5	12898
	'52	102	20	85	821	70	1692	505	20	1101	140	209	1486	116	322	30	368	1063	75	40	536	285	206	226	15	16680
	'51	324	64	236	3127	213	5481	1856	104	3493	457	719	4558	366	920	196	869	1869	147	141	1428	911	814	671	59	35629
	'50																									
	'49																									
	'48																									
	'47																									
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	Before '38																									
	Unid.*	5	1	4	28	11	95	6	6	75	33	7	11	9	3	2	21	49	2	1	16	12	5	156		1321
	Total	540	98	397	4509	335	8742	2645	138	5613	692	1097	7245	602	1413	252	1518	3519	269	246	2471	1357	1180	1421	79	89102
HUDSON	'56	89	8	150	521	62	1246	169	56	802	88	258	1363	77	40	74	130	343	64	41	286	332	111	632	36	15706
	'55	203	68	348	1174	90	2886	524	116	1932	329	675	2535	282	337	177	372	1130	190	69	729	802	413	1807	107	39890
	'54	214	58	296	1986	124	4515	451	116	3241	341	435	3403	343	290	147	340	859	180	78	1030	739	371	1357	120	44556
	'53	343	116	392	2148	254	5411	708	173	4057	436	834	4178	369	430	220	583	1509	350	90	1146	1160	436	1411	157	58736
	'52	415	141	303	2585	271	5612	782	189	3991	616	1006	4288	316	450	197	736	2049	435	114	1408	1347	478	1294	233	61954
	'51	965	231	475	4740	513	9432	1444	434	7250	983	1710	7816	494	739	540	1210	3169	914	195	1982	2399	910	3235	364	111950
	'50	658	199	373	3976	384	8725	1276	244	6335	1050	1287	6289	487	627	448	1068	3101	811	157	1590	1830	775	3005	315	100319
	'49	851	209	398	4576	456	8709	1548	402	7221	1202	1611	6836	521	890	610	1460	3564	1101	296	1972	2151	1113	3245	404	112262
	'48	488	164	233	3153	224	5258	1000	165	3785	858	933	4114	400	490	226	769	2059	385	120	1041	1552	750	1474	133	62066
	'47	239	69	150	1843	95	2692	593	61	1868	361	606	2089	246	372	83	431	953	175	82	523	1065	487	747	73	33985
	'46	169	77	92	1317	66	1749	476	51	1353	293	521	1604	185	296	72	270	697	146	55	336	898	358	548	46	25669
	'45-'42	44	13	5	126	15	142	59	10	150	51	94	171	15	51	9	27	92	49	6	43	209	32	95	10	3710
	'41	67	32	46	464	30	439	125	19	427	87	254	523	48	102	14	61	201	80	18	112	525	96	247	34	9425
	'40	38	23	40	314	18	318	95	9	318	75	133	378	33	67	22	61	133	40	14	68	252	68	176	22	6172
	'39	21	10	16	114	5	168	39	8	115	24	41	164	22	32	7	14	66	29	16	30	101	31	79	8	2726
	'38	11	3	8	59	1	72	18	10	62	25	30	95	6	15	1	10	40	18	8	13	61	8	51	4	1432
	Before '38	75	29	33	216	14	281	72	27	377	74	161	318	29	70	26	37	155	44	24	42	344	47	179	36	6161
	Unid.*	4	1	2	14	13	44	2	2	33	14		28	7	2	2	29	37	1		17	10	1			966
	Total	4874	1449	3360	29326	2635	57099	9381	2092	43317	6909	10589	46192	3880	5350	2875	7610	20157	5012	1333	12368	15777	6483	19570	2102	697709

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

For Summary of Trucks in Use by Makes, by Model Year, see page 113

• TOTAL REGISTRATIONS •

AND MODEL YEAR—*continued*

CARS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
KAISER	'56	1	.....	.....	.....	1	.....	1	.....	11	22	.....	8	4	2	.....	2	4	.....	.....	6	6	2	2	1	.....
	'55	3	4	6	56	3	8	2	6	11	24	5	34	12	2	7	6	10	3	8	15	20	9	3	5	.....
	'54	38	44	22	703	40	119	15	25	181	69	43	472	239	145	106	49	95	29	122	161	300	171	26	114	44
	'53	282	144	99	3685	169	485	103	76	821	300	119	1577	915	344	518	259	342	125	332	563	1773	602	99	411	117
	'52	327	213	139	3509	194	534	163	109	687	290	152	1735	912	392	441	291	377	158	661	653	1629	624	122	500	129
	'51	1055	661	660	8897	932	1736	476	303	2682	978	527	8121	3531	2545	1783	1463	1390	491	898	2384	6233	3385	570	2143	427
	'50	106	78	106	1389	134	156	63	33	323	82	60	782	386	383	224	171	163	86	563	298	391	555	60	333	60
	'49	529	283	334	3554	421	490	174	89	1143	320	273	2931	1444	1446	781	661	668	301	541	979	1747	1744	263	1205	222
	'48	458	289	243	3592	435	436	211	88	870	281	262	2937	1306	1395	831	672	479	175	691	1050	1550	1292	222	1108	209
	'47	289	164	106	2871	201	323	107	51	494	171	138	775	430	287	309	321	187	117	309	556	547	399	133	431	130
	'46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'45-'42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Before '38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Unid.*	18	24	11	48	3	12	9	4	62	38	5	101	66	24	6	26	23	3	30	14	48	18	13	18	2
	Total	3097	1904	1746	26304	2533	4281	1324	782	7186	2575	1584	19473	9245	6964	4998	3923	3738	1488	4155	6679	14244	6801	1513	6289	1340
LINCOLN	'56	342	176	186	5082	379	461	102	122	1251	436	173	2321	859	381	287	217	353	88	356	815	2468	539	147	426	175
	'55	311	155	142	3245	297	479	94	127	1035	322	116	1916	680	326	288	137	309	103	297	746	1569	370	144	489	115
	'54	344	272	165	4535	504	644	136	160	1382	378	143	2487	812	427	386	240	366	120	456	910	1933	519	125	554	128
	'53	476	260	158	5322	580	635	109	143	1423	481	193	2573	999	479	434	236	411	115	569	955	2293	554	160	577	169
	'52	290	201	113	3493	400	476	79	120	998	325	100	1645	709	263	306	169	277	102	385	686	1363	366	120	385	109
	'51	342	181	131	3488	405	533	81	175	1150	380	129	1835	761	391	315	230	277	97	476	796	1425	506	153	521	136
	'50	350	161	101	3274	408	407	84	139	1077	419	97	1429	658	372	269	216	299	116	456	674	1167	382	143	519	105
	'49	652	389	289	6987	744	840	170	223	2041	600	242	2606	1228	717	652	582	557	181	614	1343	1573	840	311	789	230
	'48	55	31	24	911	52	108	18	19	194	62	19	219	75	36	46	44	48	30	130	113	117	60	28	57	16
	'47	65	76	40	1441	86	193	30	30	284	65	46	243	113	74	72	68	66	38	74	233	169	88	39	95	24
	'46	36	28	10	757	50	87	19	14	140	30	21	146	59	42	25	57	51	17	12	147	98	81	31	44	23
	'45-'42	6	19	1	246	12	22	3	2	41	9	1	34	15	5	6	20	21	4	2	36	23	21	7	16	2
	'41	28	42	7	751	45	85	10	6	82	26	12	71	33	33	26	28	33	16	11	111	55	42	16	38	9
	'40	17	35	8	613	37	48	12	7	74	15	10	46	29	25	24	16	15	8	14	72	40	26	6	30	10
	'39	19	16	7	338	27	21	6	1	37	20	8	28	14	7	12	12	12	7	5	32	25	21	8	6	9
	'38	7	8	2	208	13	14	4	.....	20	4	2	15	7	7	3	4	5	3	4	15	10	15	3	9	3
	Before '38	19	24	2	371	20	44	2	3	35	9	5	30	17	28	14	8	4	9	5	34	28	28	5	14	10
	Unid.*	3	25	1	11	3	11	9	1	33	20	.....	29	15	8	4	2	3	.....	38	2	25	2	2	11	.....
	Total	3360	2101	1367	41050	4032	5108	968	1292	11297	3601	1317	17673	7082	3841	3189	2306	3107	1054	3904	7720	14381	4462	1448	4560	1273
MERCURY	'56	3215	1076	1807	28012	1900	3040	582	728	5425	3867	892	12800	6067	2974	2601	2538	3095	756	2467	4722	13129	3761	1590	3739	1079
	'55	4197	1637	2287	39017	3189	4134	736	1174	8958	5735	1210	22263	8729	4782	4227	3093	4123	1083	4131	6624	22107	5423	2178	7617	1161
	'54	2817	1433	1453	27950	2788	4202	650	1010	6609	4009	979	16857	6009	3908	3227	2415	3153	943	3611	6515	14802	4478	1488	6833	945
	'53	4314	1695	1822	31710	3348	4487	834	1093	7670	5050	1319	20615	7682	4893	3949	3192	3682	1136	3804	7873	16431	5416	2004	6428	1215
	'52	2240	1285	1066	19950	2019	2608	406	555	4215	2710	893	10215	4143	2609	2439	1852	2016	666	2396	4063	7481	3150	1143	3505	744
	'51	4195	1804	2007	31200	3774	4572	653	915	7869	4986	1265	16656	6922	5252	4238	3579	3848	1271	3029	7193	13137	5854	1946	6761	1288
	'50	4942	1611	1856	29153	3731	4174	654	925	7854	5385	1036	14411	5837	5214	4069	3127	3913	1095	3774	6837	11594	5733	1988	7154	1075
	'49	3951	1604	1599	25874	3453	3397	618	662	6333	4198	1093	12268	5438	5263	3797	3677	3402	1102	2360	6258	8796	5364	1781	5291	1095
	'48	857	257	307	4207	493	465	86	96	979	984	158	1574	869	549	460	732	514	169	1103	1054	1282	630	395	741	134
	'47	1079	455	452	7649	860	868	158	58	1355	1237	279	2195	1019	835	731	918	711	316	334	1889	1951	1130	647	1083	243
	'46	991	372	460	6173	786	712	99	37	1166	1117	237	1584	841	820	651	792	684	218	150	1312	1388	1181	575	1040	235
	'45-'42	103	54	69	973	130	87	24	3	157	125	48	204	134	100	78	83	105	25	23	134	145	161	91	116	34
	'41	383	241	185	4174	348	313	57	21	507	455	127	476	267	336	322	249	277	105	58	458	443	540	227	409	108
	'40	256	140	102	3004	402	279	33	21	385	289	90	429	220	272	253	181	170	85	52	349	343	443	128	285	56
	'39	130	60	65	1625	179	150	25	12	222	158	59	215	90	145	131	84	101	53	26	146	225	259	70	138	44
	'38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Before '38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Unid.*	41	208	10	156	34	73	27	11	216	150	12	258	121	59	36	53	70	8	124	61	287	25	66	98	5
	Total	33711	13952	15547	260827	27434	33552	5642	7321	59920	40455	9697	133018	54389	38011	31209	26565	29664	9031	27442	55268	113339	43548	16295	51038	9461
NASH	'56	249	237	156	4263	489	655	90	87	684	470	278	2953	1132	538	556	230	316	309	357	2196	2266	732	63	589	300
	'55	877	528	370	9485	1044	2230	103	329	2124	944	472	7306	2981	1318	1451	778	709	615	960	4384	4825	1541	322	1924	392
	'54	610	473	259	6229	897	1800	117	243	2069	720	397	6988	2770	1265	1416	747	805	455	1138	3831	4592	1496	266	1674	368
	'53	960	586	584	10773	1079	2331	263	270	2815	963	574	10576	4156	1802	1706	1555	829	574	1639	4730	7238	1924	417	2881	453
	'52	1298	763	750	14296	1532	2056	305	373	3648	1340	685	10723	3876	2011	2440	1631	1464	540	1853	4089	6799	2435	679	3892	438
	'51	1980	1311	1133	20812	2492	2974	401	593	5294	1966	961	14555	6783	3791	3558	2500	1584	983	2753	5901	9182	3859	896	6580	699
	'50	1405	922	885	15303	2184	1714	319	416	3442	1269	830	10210	5013	3106	2509	1768	1068	751	2567	4259	4910	3809	627	4668	557
	'49	943	684	514	8764	1214	1277	273	220	2260	845	603	6772	2965	1906	1487	1273	813	545	1009	2995	3309	2593	545	2405	504
	'48	849	451	409	6850	822	1525	222	181	1752	918	344	4565	1877	1053	995	941	712	508	934	3000	3200	1738	498	1642	328
	'47	616	372	271	5762	609	1109	184	87	1176	626	264	2957	1166	736	697	691	512	369	631	2183	1899	1289	344	1035	212
	'46	361	293	201	4513	477	761	148	62	838	386	175	1694	717	504	499	518	321	244	341	1400	963	941	220	799	177
	'45-'42	35	39	12	620	53	66	19	3	80	40	35	240	77	76	50	45	24	18	16	105	97	119	41	45	25
	'41	55	63	40	1620	145	219	35	4	190	58	73	545	184	144	133	84	42	71	76	290	203	332	38	189	55
	'40	41	46	27	861	118	140	17	15	142	37	48	324	130	125	80	65	31	56	42	176	126	212	21	141	50
	'39	19	21	17	505	66	79	9	3	80	13	21	162	71	56	26	28	15	35	33	138	62	129	16	93	30
	'38	12	12	8	262	35	54	6	4	45	12	17	101	29	42	33	15	4	17	12	67	42	113	10	53	17
	Before '38	28	48	14	1046	169	168	14	6	87	46	40	309	141	140	107	62	38	71	44	179	143	242	24	106	49
	Unid.*	8	111	5	36	1	25	43	14	81	43	3	138	37	13	17	22	1	170	23	108	16	11	39	2	
	Total	10344	6963	5815	112000	13456	19383	2538	2910	26616	10696	5830	81118	34105	18636	17762	12948	9109	6142	14775	39926	49984	23600	5038	28745	4656
OLDSMOBILE	'56	4651	1321	2067	26532	2306	4933	871	1425	8459	5699	1023	21963	8788	3690	3424	3839	5242	875	4396	10128	20002	6449	2348	5053	1354
	'55	7022	2540	3697	50471	5145	8587	1409	2825	16636	9057	1837	43120	16334	7920	6537	5954	8842	1475	7344	16884	35578	11362	3527	12917	2058
	'54	3370	1678	1889	31788	3585	5234	954	1586	9700	4533	1187	26668	9969	5447	4397	3569	4564	1015	4476	11005	20313	7390	1845	7679	1496
	'53	3932	1779	1628	31105	3458	5253	1072	1449	8885	4549	1376	22420	9816	5101	4102	3950	3919	1117	3876	10275	17445	6561	1718	6788	1437
	'52	2583	1244	1104	20910	2319	3253	645	949	5209	3097	878	12350	5689	3021	2707	2466	2431	872	2760	6125	9116	3791	1231	3909	902
	'51	3482	1528	1377	28177	3002	4653	873	1156	6721	4031	1162	15106	7585	4421	3459	3531	2987	1201	3326	8926	10544	4955	1544	4717	1127
	'50	5211	2141	1863	40972	4473	6641	1232	1495	9328	6688	1489	20287	10095	6476	4956	5090	4170	1858	4225	13183	13785	7335	2058	6964	1451
	'49	2963	1406	1127	27830	2703	4514	843	993	6142	3222	951	13413	6733	4139	2964	3659	2578	1389	3368	9445	8497	4706	1244	4693	987
	'48	1362	737	638	14158	1231	2386	497	535	2681	1394	501	7648	3885	2068	1701	2000	1242	819	1765	5382	5778	2256	725	2683	449
	'47	1147	673	539	12848	1289	2293	604	348	2738	1157	467	5958	3170	1637	1534	1774	1003	771	1299	5372	4036	2034	545	2434	408
	'46	548	383	269	7078	650	1230	287	157	1335	574	289	2526	1361	895	759	886	535	404	431	2619	1546	1056	241	1219	213
	'45-'42	91	115	58	1830	127	223	107	16	272	96	59	354	279	135	136	122	98	70	59	371	201	154	64	182	42
	'41	411	451	260	9872	729	1354	355	111	1295	487	298	1745	956	726	796	725	376	422	484	2473	1096	913	247	1043	233
	'40	271	269	173	6067	412	846	229	47	855	353	201	1109	757	492	488	529	243	368	280	1561	740	564	191	761	166
	'39	125	122	62	3111	246	426	110	23	368	171	96	481	287	200	226	218	116	194	144	741	313	281	67	272	70
	'38	84	81	31	1542	124	176	49	8	159	80	48	219	130	104	111	101	58	93	59	271	143	166	31	140	36
	Before '38	157	248	101	5778	483	569	112	52	476	188	166	820	659	492	372	311	102	279	175	839	672	579	79	417	131
	Unid.*	37	297	8	95	9	81	334	28	246	161	59	237	62	40	39	43	42	7	283	45	292	38	38	114	3
	Total	37317	16914	16912	329282	32301	52663	10583	13201	81775	45531	12024	196428	86535	47213	38307	36879	38548	13229	38780	105643	150095	60632	17743	61985	12552

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

For Summary of Cars in Use by Makes, by Model Year, see page 112

• TOTAL REGISTRATIONS •

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wye.	Totals
KAISER	'56	2		2	1	1	21			8	44		4	1				5	2			3			1	168
	'55	1		3	16		65	9	1	46	5	5	15		3		5	24	2	1	12	7	8	6	1	499
	'54	51	14	32	266	19	680	69	31	624	38	95	543	45	37	38	35	119	35	10	161	135	47	282	9	6787
	'53	188	40	67	903	79	2317	272	81	2198	120	415	2205	133	116	86	219	849	172	45	403	672	131	580	30	26361
	'52	216	45	116	1286	88	2857	482	81	2174	147	492	2697	148	188	78	275	888	202	72	591	805	217	586	32	29484
	'51	935	147	285	4765	377	9720	1912	477	8374	590	1712	9045	660	612	592	1085	3248	656	240	1864	2998	1020	3423	132	109162
	'50	110	15	53	377	67	946	186	59	822	298	181	1111	72	44	100	101	292	73	43	294	347	145	402	28	13161
	'49	582	53	132	1579	180	3647	619	302	2907	332	702	3615	230	225	344	523	1104	325	96	756	1014	537	1571	98	43986
	'48	629	78	102	2354	156	3079	618	161	2395	499	752	2371	206	257	338	475	1188	219	89	603	886	464	1297	113	40501
	'47	212	67	38	1175	99	1340	355	81	922	229	375	1046	106	146	123	207	562	83	29	319	592	237	392	42	19823
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	Before '38																									
	Unid.*	4	1	4	23	16	60	2	2	64	16	14	24	5	1	4	14	80	1		7	20	3	4		995
	Total	2930	480	844	12745	1082	24532	4524	1276	20534	2318	4743	22676	1606	1629	1703	2939	8359	1772	605	5010	7489	2809	8523	486	289727
LINCOLN	'56	210	101	75	1392	224	3453	392	104	1843	164	508	2130	138	168	53	291	1459	193	37	418	402	157	471	75	32579
	'55	150	76	114	748	181	2480	430	80	1604	405	352	1488	117	159	85	240	1513	145	38	344	380	168	482	54	25635
	'54	231	121	117	1089	176	3461	354	95	2193	473	395	2017	156	190	100	313	1948	173	47	495	531	219	657	76	33753
	'53	276	130	100	1085	226	3268	584	116	2405	427	558	2184	132	277	132	348	1953	226	44	565	748	246	589	98	37003
	'52	180	102	88	792	117	2002	387	73	1676	304	343	1415	100	187	83	217	1301	166	30	404	453	195	422	76	24631
	'51	210	88	74	1004	153	2416	487	70	1874	275	375	1808	147	207	112	296	1398	166	33	516	514	198	473	94	27901
	'50	209	101	87	867	129	2008	414	54	1523	342	314	1432	96	223	92	241	1217	132	18	422	445	210	448	88	24453
	'49	347	206	112	2145	259	4085	882	138	2939	532	723	2896	257	399	240	544	2214	389	84	853	979	495	996	145	48179
	'48	22	16	26	254	21	397	47	8	184	127	56	171	34	37	10	36	177	23	2	71	89	29	43	16	4406
	'47	36	35	22	423	36	639	79	7	276	86	128	322	55	60	14	60	198	43	10	87	159	64	98	16	6707
	'46	26	14	10	246	20	329	66	9	151	48	75	221	26	29	11	33	120	38	8	55	113	31	72	8	3784
	'45-'42	6	5	3	41	7	44	4	1	25	13	22	33	3	6	1	5	33	4		6	28	8	13		885
	'41	14	19	12	153	16	215	35	4	86	46	61	119	20	22	4	22	75	24	6	38	84	21	46	6	2762
	'40	23	23	8	100	14	99	31	7	57	51	33	66	16	16	3	13	76	17	4	25	66	10	25	5	2039
	'39	6	12	2	36	5	64	14	3	32	24	21	41	6	8	7	7	29	17	6	24	32	7	19	8	1128
	'38	7	5	4	26	1	29	9	2	13	10	12	30	6	8	3	4	18	4	3	14	22	2	7	4	625
	Before '38	13	15	6	50	3	83	8	6	63	20	30	66	11	4	4	8	32	3	5	55	45	8	19	7	1334
	Unid.*	2		1	5	9	19	2		12	8		42	2	1	1	6	29			5	6		1		409
	Total	1968	1069	859	10456	1587	25092	4225	781	16956	3355	4006	18483	1322	1998	955	2684	13790	1743	357	4395	5096	2068	4884	774	278206
MERCURY	'56	1429	410	541	8414	1452	17306	3667	688	11988	1679	2686	13720	810	1649	498	2829	10962	1199	351	3632	2323	1327	3026	435	205103
	'55	2544	670	1048	11617	1612	25402	4947	973	19793	5032	3763	17737	1158	2374	1059	4450	19247	1331	494	5033	4029	2375	5478	721	312702
	'54	2273	481	719	12335	1090	24031	3271	741	15332	3730	2436	13545	1131	1467	870	2821	13861	1042	394	4262	3353	1506	4184	542	244091
	'53	2660	631	901	11198	1518	25151	5962	1003	18499	4134	3007	17413	1273	2548	1190	3761	17064	1431	456	5009	4304	2101	4989	650	288315
	'52	1576	377	474	8716	998	12120	3194	590	9650	2587	2215	8676	672	1447	675	2105	9280	961	239	2845	2943	1215	3116	403	158643
	'51	3221	618	806	10644	1598	21852	5987	1070	17558	3635	3558	16125	1205	2622	1531	3796	15784	1677	473	4890	4854	2287	5917	712	276634
	'50	2972	537	710	10348	1521	19514	6355	720	15190	4902	2895	14271	1178	3207	1422	3759	17680	1388	342	4326	4250	2175	5484	752	262836
	'49	2868	572	689	8595	1248	16468	5673	1013	14337	3540	3194	12941	1148	2781	1555	3525	12643	1429	396	4151	4418	2583	4990	591	229621
	'48	374	75	110	1267	204	2202	906	132	1931	1164	343	1602	214	563	230	687	1967	182	53	606	542	391	589	74	35503
	'47	641	150	184	2156	238	3486	1376	221	2813	1029	652	2428	318	952	295	1015	2519	344	95	952	1124	626	887	146	53099
	'46	620	116	124	1781	230	2542	1411	255	1895	912	572	1804	247	932	332	934	2581	326	59	809	1025	541	889	112	44648
	'45-'42	78	17	16	161	44	207	147	42	158	123	84	163	29	123	50	77	351	52	12	95	159	37	109	18	5556
	'41	249	78	50	706	151	697	508	116	509	482	344	596	82	452	130	278	1095	149	18	263	535	143	414	68	19199
	'40	223	60	42	472	67	523	306	82	409	290	224	426	59	363	107	171	601	109	18	175	391	113	268	45	13802
	'39	128	28	26	245	34	338	166	46	205	228	119	228	44	173	57	64	285	56	7	90	195	52	171	18	7433
	'38																									
	Before '38																									
	Unid.*	16	4	8	83	50	193	7	1	184	61	20	179	18	8	5	105	422	2	1	42	58	5	3	2	3896
	Total	21675	4824	6348	85738	12063	172032	43703	7693	130851	33728	28312	121752	9596	21661	10006	30377	126342	11678	3408	37180	34513	17477	40494	5289	2160885
NASH	'56	202	46	254	1364	129	2967	445	149	1895	281	809	2532	251	146	189	303	920	160	163	567	985	258	1798	40	37539
	'55	504	162	557	2998	300	8278	1160	271	5036	881	1581	5834	772	409	360	920	2493	280	341	1489	2395	848	5178	143	91202
	'54	519	163	453	2539	269	7691	829	302	4760	708	1076	5008	687	350	335	744	2132	290	292	1372	1500	521	3799	204	77968
	'53	763	182	596	4193	353	10471	1288	403	6918	962	1570	7848	930	520	375	1147	3051	452	412	1217	2155	737	5286	195	113684
	'52	904	276	477	3880	531	11308	1773	380	7939	1646	2020	8220	719	981	418	1679	5522	693	313	1784	2977	978	5776	219	131319
	'51	1585	280	677	6140	872	16084	2783	570	10997	2006	3049	13396	1122	1618	773	2478	6992	959	487	2659	4726	1740	9384	368	195268
	'50	1093	262	461	4687	589	10493	1880	409	7789	1859	1903	8896	805	1097	740	1686	5016	831	259	1687	3278	1209	6318	338	138136
	'49	765	173	334	3357	370	7156	1178	393	5250	1160	1462	6139	565	705	499	1044	2888	619	194	1251	2391	1146	4601	221	90829
	'48	525	94	288	3108	222	6457	1079	246	4556	821	1014	5351	601	589	274	1042	2192	365	142	1111	1751	878	3492	136	72648
	'47	404	82	193	2473	176	4489	760	166	2919	641	858	3421	451	463	208	676	1503	285	85	776	1332	716	2155	91	51120
	'46	292	59	112	2033	122	2898	567	129	1639	393	672	2234	269	275	152	486	1075	201	66	497	1230	502	1377	62	35125
	'45-'42	34	14	5	122	7	167	30	27	144	39	137	172	25	29	23	48	100	24	7	25	208	38	218	6	3829
	'41	64	27	29	470	37	542	79	50	380	95	366	534	68	25	45	88	168	46	10	55	617	90	670	23	9475
	'40	51	24	29	359	10	357	58	10	303	67	234	387	31	24	26	65	118	27	11	26	283	73	368	11	6023
	'39	15	10	11	198	8	189	26	17	110	31	98	210	28	17	10	21	23	18	13	18	137	33	173	11	3154
	'38	22	7	13	110	7	138	16	14	81	16	78	141	7	7	11	25	32	15	1	11	71	6	171	4	2026
	Before '38	65	34	41	273	17	320	25	25	302	51	197	440	49	16	31	47	87	41	16	26	235	35	509	19	6229
	Unid.*	3	1	3	22	25	61	2	3	42	16		95	3	4	5	33	77			7	28	1	1		1416
	Total	7830	1896	4533	36326	4044	90066	13979	3564	61260	11675	17124	71158	7401	7275	4474	12512	34389	5326	2812	14578	28299	9811	51274	2091	1086592
OLDSMOBILE	'56	1838	473	776	12353	1683	32066	5516	803	17779	2756	3469	20397	1325	2364	776	4514	16580	1375	541	5054	3071	1603	5059	502	299518
	'55	3501	1328	1428	18439	2410	53613	9607	1661	33591	7891	6030	33904	2584	4631	1500	8659	34208	2438	677	8937	7117	3611	12957	1126	550924
	'54	2577	723	992	10284	1457	32934	5490	1157	20951	5377	3309	19699	1595	2721	1393	4109	21366	1729	471	4967	4486	1910	9107	753	334892
	'53	2371	733	912	9408	1335	28738	6773	934	20373	3961	3660	21205	1543	3208	1097	4042	17662	1681	609	5088	5390	2061	7515	765	314075
	'52	1535	460	563	6117	1035	16960	4774	532	12707	2743	2382	11973	970	2611	710	2561	11675	1110	430	3517	3433	1330	4782	479	194930
	'51	2072	524	830	8806	1151	24620	6488	785	16605	3021	3210	16092	1459	3406	1061	3679	12730	1369	546	4532	4989	1893	6980	539	256980
	'50	2803	677	1181	13374	1463	34636	9958	1037	22591	4370	4269	22004	2299	5281	1459	5081	17427	2027	770	6319	7296	2917	9779	677	362740
	'49	1623	439	841	9160	829	23861	4742	604	15915	2609	2876	15228	1742	2675	913	3044	8744	1157	575	4018	5262	2147	6765	432	236712
	'48	924	215	460	5813	371	13781	1841	326	8952	1369	1455	8180	932	890	488	1540	4084	529	247	1841	2710	1349	3484	223	126864
	'47	932	181	447	6055	270	11910	1740	251	7335	1219	1460	7457	976	900	348	1357	3206	550	254	1687	2768	1303	3071	206	112131
	'46	404	117	218	3454	150	5668	907	126	2961	676	832	3392	425	442	198	649	1688	286	123	781	1596	633	1510	81	54880
	'45-'42	62	37	26	548	33	704	204	20	397	120	240	466	72	76	45	80	358	53	15	112	489	90	243	24	9770
	'41	361	151	198	3214	160	3799	827	118	2290	664	1004	3125	474	474	161	549	1511	335	107	687	2179	566	1423	115	52400
	'40	212	96	171	2229	118	2760	498	76	1421	457	573	2189	288	333	115	344	818	244	102	413	1233	423	920	53	34051
	'39	119	46	117	1150	49	1452	241	44	584	224	255	1059	118	137	65	175	356	81	73	216	563	167	375	20	16155
	'38	60	24	43	466	26	594	104	31	276	125	122	358	55	48	26	48	161	33	27	69	319	80	192	9	7310
	Before '38	242	112	165	1419	74	1737	291	72	1243	347	427	1506	210	142	120	187	617	142	74	242	1116	255	792	72	25873
	Unid.*	18	1	5	87	83	190	2	4	116	49	9	348	17	9	11	81	258	2	1	38	31	6	14	2	3885
	Total	21654	6337	9373	112376	12697	290023	60003	8581	186067	37978	35582	188582	17084	30348	10486	40899	153447	15141	5642	48496	54050	22344	74948	6076	2994090

Unid.*—Unidentified as to model year. Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

For Summary of Trucks in Use by Makes, by Model Year, see page 113

• TOTAL REGISTRATIONS •

AND MODEL YEAR—*continued*

CARS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
PACKARD	'56	125	102	41	1622	129	344	33	73	383	197	73	988	446	180	191	129	196	40	244	482	1392	307	59	234	109
	'55	412	303	201	4317	439	1178	106	354	1413	586	234	3452	1548	693	638	436	557	195	986	1313	3067	1044	251	683	297
	'54	199	206	99	2107	277	678	73	145	881	324	113	2459	747	352	277	259	255	119	609	960	1535	602	73	506	199
	'53	767	436	296	6737	689	1699	206	380	2703	918	281	6117	2863	748	858	803	1040	336	1073	2249	5159	1645	339	1502	373
	'52	684	417	287	5365	644	1014	134	419	2040	690	265	3428	1471	745	824	641	841	224	2118	1256	2661	1141	383	1305	258
	'51	825	578	397	8495	1041	1736	232	482	2721	963	388	8219	2331	1282	1109	943	838	327	1165	2139	3739	2071	432	1773	347
	'50	663	350	276	5767	773	1103	176	284	1970	706	255	3968	1706	1063	912	773	560	256	893	1406	1942	1844	296	1319	235
	'49	735	435	422	8257	841	1135	205	318	2165	827	295	5011	2130	1366	1061	1071	686	357	1049	1902	2659	1742	405	1669	356
	'48	483	487	278	8219	663	1252	199	249	1655	528	205	3220	1454	1006	582	712	450	371	660	1881	2381	1008	235	968	206
	'47	223	183	94	3552	263	534	108	84	657	317	104	981	449	271	215	286	180	132	272	728	676	400	120	397	93
	'46	159	125	61	2496	193	342	69	49	397	151	52	585	293	172	139	183	148	79	177	500	269	259	66	298	73
	'45-'42	65	69	16	1347	70	162	31	14	138	58	24	186	94	45	44	74	52	32	39	186	84	95	31	87	25
	'41	108	121	46	2849	192	447	73	45	409	123	49	396	155	115	99	135	97	101	162	561	203	212	38	223	50
	'40	100	132	35	2567	183	526	56	19	348	139	48	431	189	114	79	152	67	76	174	434	231	207	45	220	47
	'39	39	44	17	1412	70	197	22	17	169	55	16	191	70	44	37	52	29	38	104	222	86	110	17	93	15
	'38	21	36	15	879	55	146	9	8	82	16	10	125	38	49	34	37	20	26	62	120	57	84	5	66	22
	Before '38	61	93	25	2326	157	444	46	38	238	95	24	352	179	99	80	95	47	97	148	455	246	223	31	157	44
	Unid.*	5	45	3	43	3	21	79	5	56	24	3	71	19	12	8	6	7	.....	108	1	87	8	10	22	3
	Total	5654	4141	2611	66367	6701	12960	1862	2963	19417	6716	2390	38182	16181	8356	7188	6787	6050	2806	10043	16765	26694	13002	2836	11726	2752
PLYMOUTH	'56	4238	1532	2456	28445	2383	4879	968	2950	7091	5587	1096	19453	9029	4191	3219	3636	4153	1515	6718	10079	19895	5193	2536	6714	1445
	'55	9032	3140	4696	43232	4664	10007	1750	4242	14601	10072	1835	43971	19200	9107	7589	7026	8556	3068	11213	18199	39538	10424	5141	18634	2118
	'54	4933	1998	3173	23813	2972	7019	976	2711	9865	6151	1167	26650	11803	6449	5066	4591	5912	2122	8216	13235	19324	7365	3190	10301	1636
	'53	8393	2968	5332	43500	4823	8868	1479	3262	13365	9670	1984	38918	19048	10335	7993	7847	9007	3043	9223	17268	30914	12481	5243	16641	2228
	'52	4842	1863	2975	28440	3299	4997	852	2620	7620	5742	1360	21770	9443	5803	4846	4543	5235	1884	6549	10514	15892	7106	3049	8737	1341
	'51	7800	2781	4468	41567	5368	8287	1382	2921	12349	8697	1937	34693	15940	10040	7547	7604	7519	2761	8260	16358	24140	11797	4433	14402	2045
	'50	8206	2818	4534	44486	5785	8277	1294	2647	12721	8930	2069	33616	15864	10477	8066	8254	8112	2733	7808	16513	23024	12808	4568	15891	2063
	'49	7782	2695	4017	42036	5561	7600	1320	2121	11472	7283	2013	31211	15515	10838	7638	8123	6967	2529	7485	15989	19819	12141	3821	13390	1989
	'48	4975	1662	2291	27249	3133	4288	849	1217	6181	5545	1172	17524	8625	5974	4691	5134	4748	1770	4917	9923	10784	6902	2992	8041	1089
	'47	3794	1523	1816	24030	2698	3965	770	894	5432	3952	1075	13473	7342	5526	3922	4635	3303	1621	3618	8528	8210	5971	2174	6043	973
	'46	2358	939	1225	14490	1777	2616	442	479	3430	2175	656	7887	4556	3129	2368	2954	1895	868	3024	5321	4122	3701	1151	3866	569
	'45-'42	481	366	236	5784	403	670	173	102	831	589	207	1313	978	722	510	626	438	181	567	978	848	882	292	892	146
	'41	1942	1234	799	22963	1803	3823	822	407	3744	2237	704	6150	4495	2689	2179	2633	1641	971	2687	5903	3712	3216	917	3603	506
	'40	1036	807	485	16576	1080	2435	399	225	2270	1192	500	3835	2861	1675	1332	1508	866	644	1781	3445	2248	2424	511	2270	349
	'39	539	455	232	9787	521	1602	266	112	1327	660	329	2100	1340	1172	833	776	467	385	803	2023	1148	1442	279	1354	211
	'38	238	245	113	5401	371	823	125	48	618	272	168	981	845	595	511	459	276	220	430	763	583	930	107	722	130
	Before '38	668	619	382	17812	1659	1880	266	83	1569	864	582	3068	2801	1810	1751	1314	868	599	737	1586	2025	2603	419	2093	494
	Unid.*	72	249	31	193	3	106	524	82	362	303	23	509	149	60	65	100	114	8	717	61	513	65	117	251	13
	Total	71459	28112	38241	439796	48813	81942	14457	27113	114848	79921	18877	307152	149632	90592	70126	71765	69777	26922	84754	156686	226519	107331	40940	133645	19345
PONTIAC	'56	3981	1328	1682	26812	2014	4052	788	1443	6322	5532	1117	16852	7322	3302	3038	3139	5313	1038	3554	7111	16189	3901	1994	4037	1100
	'55	7759	2558	3630	46893	4681	7925	1378	2400	14209	10746	2025	33108	16910	7642	6703	5797	9221	2123	6979	13844	34918	8300	4187	14743	1926
	'54	3433	1147	1785	17080	2325	4780	799	1456	7200	5133	815	18495	7832	4245	3759	3519	4505	1361	5305	9181	16537	4267	2061	6276	748
	'53	5336	1995	2709	32919	3676	6434	1256	1740	9839	7480	1293	26059	12307	6685	5026	5355	5824	1685	5667	12009	24311	7708	2964	8416	1257
	'52	3787	1470	1912	23377	2694	4068	772	1194	6048	4765	1020	15655	7650	4006	3557	3508	3958	1140	3665	7273	13616	4876	2043	5310	968
	'51	4973	1875	2216	31678	3756	5557	1038	1376	8161	6332	1361	20931	10552	5887	4825	5055	4768	1620	4623	10147	15847	6955	2407	7204	1302
	'50	5921	2286	2606	40252	4626	6794	1389	1792	9983	6764	1649	25547	12095	7467	5625	5406	5605	1925	5714	12469	18078	9052	2938	9315	1527
	'49	3595	1400	1552	28175	2774	5056	768	1031	5733	3897	1095	15386	7471	4829	3585	4144	3262	1499	3969	9114	10146	5401	1901	5707	967
	'48	2979	1130	1132	20142	2107	3901	571	815	3994	2714	754	10711	5368	3447	2555	3130	2022	1426	3108	7013	7989	4178	1429	3874	647
	'47	1960	861	922	14862	1706	3455	549	415	3041	1962	583	7735	4280	2659	2160	2802	1451	1352	2255	6047	6021	3276	1013	2939	416
	'46	1023	500	473	8274	821	1880	329	201	1569	936	292	3496	2068	1223	968	1429	701	793	1162	3196	2600	1677	540	2062	196
	'45-'42	211	183	108	2773	256	428	111	23	353	247	112	572	414	303	251	293	202	147	220	575	390	365	145	250	73
	'41	828	610	411	12883	930	1993	381	186	1520	785	348	2250	1463	967	1090	1049	684	626	888	2810	1612	1461	467	1300	186
	'40	414	302	249	7611	499	1323	215	93	920	463	179	1463	893	611	565	649	313	470	661	1686	1038	924	270	817	93
	'39	268	143	126	3894	254	790	145	48	475	260	96	783	482	436	314	353	176	310	256	979	472	542	146	463	41
	'38	100	83	63	1968	143	268	70	14	220	96	45	326	212	191	153	149	67	140	91	294	239	289	57	206	28
	Before '38	251	214	134	5762	482	782	191	33	535	238	167	1070	958	657	609	372	132	360	288	817	660	988	155	654	117
	Unid.*	52	209	17	115	4	57	422	42	297	224	20	305	104	42	51	58	84	5	616	38	336	55	78	143	11
	Total	48551	18294	21737	325470	33749	59447	11153	14104	80429	58604	12969	200744	98361	54599	46633	46207	43308	18020	48721	104803	171077	64213	24793	73718	11603
STUDEBAKER	'56	532	279	345	4828	408	649	137	95	1026	920	339	2949	2498	715	540	394	666	239	699	907	2135	1137	385	748	317
	'55	1272	834	735	12330	1119	2042	258	408	3342	2035	755	6688	6351	1930	1484	1252	2008	622	1619	2342	4515	2732	801	2634	761
	'54	570	424	382	7560	550	1161	182	250	2425	1186	382	4139	3583	1222	956	975	1366	410	1514	1879	2741	1527	404	1420	388
	'53	1722	976	876	17441	1148	2317	521	429	3880	2235	699	9451	7693	2406	1876	2072	2226	692	2074	4310	7078	2826	995	3184	649
	'52	2251	1149	1237	18903	1518	2361	673	455	3955	2649	1014	9294	6794	2892	2209	2115	2561	733	1858	4011	6432	3856	1489	3294	876
	'51	3387	1629	1662	25942	2447	3549	927	672	5464	3748	1405	13594	10195	4389	3418	3196	3396	1023	2712	5628	8215	5450	1885	4548	1189
	'50	4284	2434	2031	37103	3014	4265	1212	784	7262	4315	1739	16656	13617	5084	4156	3940	4719	1415	2781	8144	9314	7449	2109	6020	1566
	'49	1408	940	648	16878	1076	1673	465	315	2519	1490	750	5919	3662	1924	1431	1376	1384	519	1848	2810	2958	2436	671	2029	595
	'48	1642	1154	711	20265	1366	2187	430	599	3142	1685	766	7063	5396	2422	1968	1555	1429	688	4301	3566	3510	2993	726	2593	673
	'47	1100	725	444	15043	1152	1487	306	214	2128	1009	574	4348	3650	1952	1426	1106	884	397	755	2032	1787	2334	456	1824	442
	'46	146	81	31	3220	94	144	38	18	233	126	80	395	307	153	110	95	104	56	225	200	142	196	68	163	54
	'45-'42	64	73	30	2111	126	145	49	10	167	97	72	338	279	162	96	69	115	22	34	120	119	254	45	141	71
	'41	240	221	101	6135	385	437	112	47	540	228	189	988	686	519	292	183	235	94	189	506	358	659	84	392	158
	'40	134	124	44	3759	199	187	65	38	299	130	128	462	419	296	146	99	101	66	210	245	173	404	57	252	106
	'39	34	58	28	2540	104	143	25	15	158	57	68	297	234	148	78	47	32	48	57	173	99	226	25	142	52
	'38	15	25	5	909	41	52	6	3	47	21	19	110	95	66	45	19	24	13	29	55	34	95	3	39	22
	Before '38	40	83	20	1921	127	159	21	11	119	71	61	258	320	204	119	78	38	59	64	151	124	295	20	107	61
	Unid.*	29	125	6	82	5	34	129	10	99	110	12	128	81	18	18	33	33	4	185	18	116	18	41	58	4
	Total	18890	11234	9336	194990	14879	22992	5558	4373	36905	22110	9062	83117	68060	26480	20370	18506	21331	7091	21124	37097	49950	34887	10244	29588	7864
WILLYS	'56	80	66	50	817	382	121	.....	11	454	91	198	282	77	46	49	176	146	112	67	174	372	113	35	76	221
	'55	110	113	101	2029	712	272	15	24	761	102	271	699	302	125	118	239	163	252	125	417	575	195	93	179	240
	'54	138	184	87	1913	557	286	35	38	787	122	258	839	279	158	142	171	180	218	331	573	901	271	77	277	201
	'53	680	360	301	5253	932	1265	92	145	2189	583	559	2646	1238	561	440	715	533	635	659	1635	2078	821	286	710	469
	'52	762	263	335	4332	720	754	67	121	1715	596	469	1579	878	451	424	823	568	347	555	1015	1387	446	309	652	416
	'51	832	209	366	3151	951	740	3	89	1806	367	552	1418	636	291	296	820	577	391	334	1063	871	407	281	587	396
	'50	556	276	357	3060	842	836	26	88	2013	362	358	1645	787	351	311	729	622	292	308	1072	1001	396	279	796	297
	'49	582	210	456	2648	927	553	23	55	1483	404	349	1636	700	491	357	893	706	304	338	812	917	406	389	870	252
	'48	1002	255	703	4225	1789	692	22	59	1748	315	705	2700	872	1114	573	1710	1043	431	320	838	1590	960	543	1256	533
	'47	737	192	427	3753	1382	479	17	42	1484	240	500	1914	761	991	452	1129	793	439	338	712	1504	711	434	1123	443
	'46	495	68	243	4383	942	514	24	10	926	59	204	1463	507	591	299	569	364	353	218	674	1528	537	239	663	205
	'45-'42	349	174	85	3527	359	190	18	3	419	54	185	310	159	122	131	240	158	145	94	217	216	112	159	204	92
	'41	117	54	33	1550	48	55	10	1	143	37	44	104	63	43	27	47	39	17	30	49	75	47	49	63	22
	'40	72	45	24	990	41	37	3	2	133	29	21	79	60	38	27	33	38	12	8	40	55	52	25	22	13
	'39	13	9	3	419	8	12	2	1	36	7	4	10	13	7	6	11	8	6	9	9	8	23	8	14	1
	'38	12	5	5	302	8	7	.....	.....	37	5	2	21	26	11	22	6	9	2	3	6	4	17	3	12	3
	Before '38	23	34	7	994	45	36	1	1	71	21	10	71	67	45	50	30	16	12	6	28	44	86	11	25	7
	Unid.*	26	29	2	29	7	15	7	161	92	18	6	66	16	8	3	27	19	4	935	8	152	11	22	26	3
	Total	6298	2566	3585	43375	10632	6804	365	851	16297	3414	4696	17482	7441	5444	3729	7969	5982	3972	4608	9342	12978	5611	3242	7546	3814

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

For Summary of Cars in Use by Makes, by Model Year, see page 112

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
PACKARD	'56	98	43	37	792	65	1705	216	45	1009	91	158	1869	61	30	48	100	336	65	22	263	177	138	330	27	15793
	'55	408	196	136	2284	214	5205	633	184	3648	455	444	4587	250	271	256	562	1579	188	77	961	839	458	1088	131	49977
	'54	186	61	101	1599	88	3157	396	92	2117	189	202	3094	128	165	88	345	769	89	71	554	437	299	587	66	28904
	'53	431	212	226	3971	284	8939	1330	203	6185	615	640	7523	417	580	320	922	2838	362	177	1388	1242	868	1647	151	81890
	'52	340	170	144	2487	271	5216	1013	184	3684	563	902	4596	246	454	237	623	2595	340	125	1088	977	660	1121	185	57678
	'51	752	224	217	3438	367	8476	1339	306	5843	648	1239	7033	466	692	494	1053	3064	439	225	1619	1850	881	2067	246	85533
	'50	490	130	179	2569	270	5547	1052	193	4114	660	837	4987	331	475	361	769	2024	333	170	1163	1141	606	1606	169	59678
	'49	639	152	214	2692	277	6974	1282	237	4696	839	937	6275	308	540	449	830	2233	300	208	1401	1389	612	1839	199	71021
	'48	392	162	215	2671	177	5906	822	96	3527	608	870	5069	300	412	192	619	1703	263	155	972	1405	674	1173	124	57811
	'47	158	59	74	1298	83	2146	307	33	1211	274	289	1796	125	188	53	288	611	103	47	380	541	275	373	38	22091
	'46	102	47	51	919	56	1178	215	26	640	165	219	1132	96	128	30	196	432	80	31	250	456	180	216	33	14214
	'45-'42	38	32	7	304	19	313	69	9	254	56	99	375	38	52	7	77	134	26	16	75	219	48	75	14	5421
	'41	73	61	60	762	56	898	188	10	509	112	227	1063	108	130	10	149	272	63	33	207	512	121	188	16	12839
	'40	68	57	44	843	30	955	163	17	426	115	177	1018	74	116	12	126	307	72	44	206	421	137	188	23	12258
	'39	35	21	18	390	17	419	71	6	162	49	82	443	41	66	3	47	103	27	23	96	144	53	74	9	5568
	'38	32	11	14	203	14	283	40	4	113	19	45	243	18	33	7	23	55	30	10	62	102	35	43	5	3468
	Before '38	69	48	50	627	40	813	105	16	490	80	116	877	101	81	20	64	186	54	35	132	318	78	168	24	10392
	Unid.*	4	1	.....	12	15	56	3	.....	27	11	2	128	2	3	6	24	43	.....	.....	8	15	2	2	1	1016
	Total	4315	1687	1787	27861	2343	58186	9244	1661	38855	5549	7695	52110	3108	4416	2593	6815	19284	2834	1489	10825	12185	6327	12907	1481	595547
PLYMOUTH	'56	2123	370	889	14830	1274	35061	5827	1032	19297	2161	3111	31621	1669	2706	825	4837	12594	984	770	7049	3090	2922	4091	429	319333
	'55	4293	963	2060	23809	2182	58650	10476	2142	36715	6139	5317	50364	4143	5358	1845	10536	29049	1996	1372	12828	7415	6615	10852	1011	607185
	'54	3058	618	1464	16655	1407	44118	6982	1748	22464	3917	3437	29233	2647	3372	1480	6776	18166	1093	1100	8610	5545	4005	7402	653	386386
	'53	5149	951	1958	19098	2502	49256	11415	2609	34782	7261	5535	43426	3039	5593	2773	10069	26963	1851	1387	11414	8432	5551	11560	1162	569569
	'52	3358	584	1144	10826	1541	27269	6799	1823	19586	5235	3706	24308	2011	3223	1531	5481	16659	1301	810	7140	5323	3361	7222	692	332255
	'51	5515	787	1580	18426	2139	44316	10352	2419	31960	6886	5338	39246	2672	5159	2470	8842	25085	1877	1171	11389	8135	5467	12247	1085	519681
	'50	5446	777	1575	18342	2148	44680	10525	2397	31915	7218	6011	39622	3015	4948	2516	9557	26685	1999	1142	11350	9305	5572	12440	1150	531908
	'49	5726	728	1589	18109	1936	43185	9903	2352	32190	6583	5955	38577	3126	4677	2508	8485	23526	2155	1050	11077	8975	6125	12004	1108	502987
	'48	3353	609	1089	10722	1076	23236	5334	1597	17836	4122	3235	21063	1885	2874	1718	5220	13754	1254	674	6610	5420	3739	6578	653	295127
	'47	3300	415	866	10373	951	20555	5046	1267	15861	3306	3006	18786	1709	2505	1616	4280	11366	1068	521	5517	4945	3629	5670	544	252590
	'46	1871	247	467	6932	587	12471	3218	734	8829	2112	1842	11581	984	1538	859	2749	7729	698	302	3282	2965	2265	3469	283	154002
	'45-'42	406	108	84	1813	154	2078	732	197	1586	396	710	2043	222	434	171	495	1465	218	48	776	1400	482	679	74	35548
	'41	1457	385	471	8367	537	10324	3510	569	8000	1655	2931	10909	1270	1960	585	2279	5251	779	295	3381	5120	2192	3078	262	157147
	'40	828	275	339	5203	255	6756	1841	359	5274	1055	1848	6599	801	1097	359	1152	2762	484	215	1758	3176	1381	2143	178	98902
	'39	607	165	192	3254	166	3874	1170	199	2766	635	1014	3841	506	735	262	587	1593	321	133	993	1813	669	1289	101	57348
	'38	350	92	99	1435	73	1955	458	116	1186	436	472	1984	158	258	151	284	984	119	67	483	915	290	747	57	28936
	Before '38	1117	333	326	3141	270	4097	1274	354	4923	1174	1884	6526	516	819	374	845	2591	540	211	1135	3607	1123	2229	224	88117
	Unid.*	54	3	8	126	120	258	56	9	163	82	20	437	20	25	20	237	506	.....	9	105	87	7	3	4	7019
	Total	48011	8310	16180	191461	19318	432129	94918	21723	295313	60375	55372	380172	30394	47261	22063	82511	226729	18717	11277	104877	86268	55395	103703	9679	4944040
PONTIAC	'56	1582	477	830	9899	1788	23053	4676	453	16481	2279	3246	17203	764	2159	547	3172	14636	1225	533	5389	2926	1678	3620	418	251836
	'55	3265	1032	1729	17757	2573	45678	10442	1172	34333	7787	5890	32882	1993	4971	1235	8888	33141	2230	933	9629	7165	4309	9846	1041	522344
	'54	2087	398	1321	11789	1138	30210	5071	619	19109	4276	1746	17965	1211	2438	911	3965	15984	1084	568	5217	2843	2158	6305	547	273012
	'53	3195	725	1408	15755	1690	38023	8558	1201	27247	4947	3517	24830	1642	3780	1198	6130	19842	1643	800	7182	5024	3283	9019	775	391362
	'52	2140	494	869	9813	1236	21604	5787	834	16754	3583	2709	15204	1014	2631	875	4308	14020	1307	460	4848	3742	2141	5375	581	250479
	'51	3223	614	1098	13791	1475	29790	7426	1201	23458	4326	3780	21417	1482	3359	1330	5690	17283	1636	662	6244	5437	3111	7991	694	336965
	'50	3879	791	1364	16592	1642	35752	8820	1281	26788	5646	4674	25419	1851	3939	1656	6720	20215	2172	844	7388	6919	3650	9326	796	405349
	'49	2363	486	961	13241	932	27822	5166	847	17577	3326	2947	15915	1373	2428	1094	3995	10286	1468	599	4473	4618	2567	6429	493	263585
	'48	1799	357	767	9548	627	18909	3967	650	13111	2374	2249	11989	1036	2150	848	3233	6844	1001	475	3268	3595	1948	4529	342	192132
	'47	1452	299	613	8727	485	14863	3574	427	10219	2009	2157	9890	1012	1767	662	2326	5142	781	466	2719	3239	1925	3563	234	153275
	'46	697	149	339	5012	261	7409	1971	225	4637	1003	1199	4612	553	1004	324	1189	2410	405	216	1421	1909	995	1774	128	78233
	'45-'42	164	61	47	1081	60	979	408	55	857	241	404	836	127	273	81	235	641	128	29	264	658	203	390	42	17089
	'41	612	218	236	4894	234	4958	1668	168	3021	1070	1631	3970	564	1130	227	882	1968	500	169	1233	2429	743	1660	130	72049
	'40	299	122	185	3327	133	3386	1004	86	2011	605	901	2481	329	455	114	459	949	273	121	687	1346	537	1158	65	43784
	'39	181	56	123	1950	59	2033	463	57	998	392	381	1283	209	293	63	237	504	91	85	406	619	232	588	30	23565
	'38	97	32	46	796	30	887	196	24	475	178	193	550	73	94	47	101	266	41	31	135	298	90	290	16	10494
	Before '38	369	96	160	1722	82	1747	377	79	1632	538	580	1789	171	265	133	223	672	178	103	335	966	268	1034	67	30391
	Unid.*	38	1	7	90	91	200	7	4	115	61	9	263	12	9	4	140	312	3	3	54	52	3	6	2	4858
	Total	27472	6406	12105	145576	14516	307303	69581	9383	218623	44041	38213	286498	15436	33145	11349	51693	165115	16368	7097	60690	53783	29941	73410	6401	3320782
STUDEBAKER	'56	306	149	175	1523	231	3408	756	159	2073	381	726	3438	214	311	141	528	1974	155	100	757	649	349	720	81	43191
	'55	855	515	425	3825	652	7874	1881	395	5867	1232	1783	6616	612	876	365	1478	5608	329	286	2296	1981	1123	2096	191	109930
	'54	585	341	357	2460	287	5716	950	203	3468	943	908	3398	410	379	336	813	3113	195	175	1307	1318	521	1487	89	67356
	'53	1228	392	462	5424	730	11878	2478	494	8941	1667	1574	6783	676	1111	579	2027	6896	559	246	2523	2402	975	3505	228	145754
	'52	1523	402	472	5359	914	12095	3204	676	9124	1987	1973	9537	724	1486	661	2451	8853	794	292	3061	3026	1238	3976	325	156732
	'51	2366	456	684	7682	1273	16362	4546	847	13082	2548	3230	13269	1026	2140	1085	3486	12027	1305	372	4116	4996	1944	5922	417	224829
	'50	2750	660	871	10445	1655	21046	5290	1031	15601	3534	3717	16731	1477	2524	1319	4586	16448	1879	467	4973	6269	2203	7371	501	288841
	'49	982	267	336	4066	471	8290	1835	437	5288	1533	1668	6798	623	840	480	1462	4674	781	226	1908	2797	971	2671	278	107302
	'48	1343	360	374	4925	533	9715	2302	475	6465	1440	2354	8644	820	1003	595	1661	5320	904	232	2221	3732	1213	3005	267	132781
	'47	1096	217	198	3531	396	5776	1555	356	3597	1241	1689	5007	474	733	452	1051	3782	560	102	1366	2608	838	1943	222	86369
	'46	114	27	19	389	34	510	152	36	320	216	212	451	33	94	40	111	421	55	17	145	297	86	140	20	10416
	'45-'42	88	32	16	253	25	286	100	39	226	74	278	361	41	53	36	78	296	71	7	102	507	73	169	16	8056
	'41	314	95	46	905	84	994	290	72	788	244	686	1225	135	181	99	251	765	212	25	300	1246	215	596	69	23755
	'40	132	49	27	408	41	537	170	43	452	146	306	717	68	124	57	115	399	114	21	150	580	138	321	39	13301
	'39	80	41	19	261	21	335	68	23	279	90	214	523	45	47	35	58	230	88	12	67	377	91	192	10	8110
	'38	40	15	8	113	7	145	14	9	92	35	66	237	10	10	6	19	73	22	7	31	131	28	68	5	2985
	Before '38	131	44	23	343	38	393	39	22	372	94	197	583	56	29	31	50	272	66	8	70	410	78	227	24	8131
	Unid.*	5	3	3	42	153	98	7	3	44	29	6	147	6	1	15	54	196	.....	.....	20	28	2	2	2	2260
	Total	13928	4165	4514	51974	7845	106256	25617	5320	76079	17434	21568	86465	7850	11942	6354	20257	71347	8087	2595	25411	33384	12088	34411	2784	1440099
WILLYS	'56	37	28	82	198	184	675	29	38	424	6	257	283	25	9	13	78	316	79	162	178	207	156	104	90	7852
	'55	95	124	166	321	232	1245	162	42	1067	73	358	1700	51	44	61	188	483	193	209	299	393	246	249	283	16517
	'54	107	76	149	455	154	1662	183	40	880	62	386	1016	55	72	108	166	514	187	194	344	386	184	408	221	16739
	'53	313	181	373	1987	360	5977	1152	119	3615	230	853	3303	186	414	177	694	1293	327	459	826	973	701	934	336	51568
	'52	316	124	215	1431	395	3797	1169	112	2516	306	856	2700	152	390	151	552	1492	315	308	796	840	641	686	242	40310
	'51	259	111	202	1230	331	3070	421	147	1837	242	784	2223	159	186	131	548	1470	236	388	607	799	481	429	338	33566
	'50	221	106	211	1339	343	3127	526	130	1852	319	576	2982	197	239	109	769	1725	216	297	611	734	621	443	260	35613
	'49	308	61	141	1131	277	2547	542	138	1844	353	336	1727	189	243	106	731	1760	192	182	677	657	598	451	217	32179
	'48	533	76	168	900	440	2598	423	406	2547	350	287	2531	160	195	103	1069	2476	387	336	1014	930	321	679	411	45338
	'47	430	82	136	788	405	1853	268	286	2029	313	281	2009	126	127	66	778	1769	281	305	822	860	251	499	321	36082
	'46	251	59	130	717	275	1493	75	174	1684	96	71	2103	116	20	13	368	996	144	301	594	483	52	282	154	26729
	'45-'42	74	64	47	275	168	726	22	45	398	54	62	219	69	12	12	210	488	240	66	272	933	20	74	54	12236
	'41	22	16	10	114	31	159	54	31	117	37	104	482	29	27	12	35	105	26	4	48	162	23	37	12	4468
	'40	12	9	5	104	10	91	34	9	137	39	92	126	8	20	14	42	96	9	2	25	95	19	39	1	2937
	'39	4	1	3	24	4	31	12	6	18	21	25	23	1	7	6	6	24	2	.....	6	14	6	3	1	897
	'38	5	1	3	25	4	27	8	6	18	8	16	25	1	11	2	.....	31	3	2	5	14	2	9	2	757
	Before '38	44	10	10	56	13	85	13	10	166	31	52	103	11	18	12	23	65	9	4	18	95	19	60	6	2674
	Unid.*	6	.....	5	6	35	41	3	.....	20	11	5	152	4	1	.....	40	39	.....	1	8	20	2	2	.....	2095
	Total	3037	1129	2056	11101	3661	29204	5096	1739	21169	2553	5401	23707	1543	2025	1096	6299	15132	2848	3220	7151	8595	4343	5398	2949	368544

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

For Summary of Trucks in Use by Makes, by Model Year, see page 113

• TOTAL REGISTRATIONS •

CARS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
ALL OTHERS	'56	269	427	118	18841	248	1489	93	326	1777	570	177	1751	693	358	234	135	308	335	489	2024	1781	344	87	492	306
	'55	282	311	116	15795	345	1608	117	323	1802	564	101	1426	549	240	255	143	303	209	486	1732	1171	234	124	554	123
	'54	199	177	80	9340	257	980	74	257	1112	401	57	2770	327	114	170	139	258	95	391	1234	783	185	77	360	63
	'53	237	231	97	12663	292	1045	111	235	1719	493	85	1077	450	108	150	179	278	146	365	1371	923	368	111	519	59
	'52	244	256	96	10977	322	938	148	183	1734	421	94	1064	396	116	176	152	281	133	359	1310	718	185	97	621	59
	'51	257	246	113	7880	296	1114	121	203	1992	660	70	1532	435	116	205	189	247	146	314	1341	807	179	128	839	47
	'50	196	132	117	4284	205	711	83	130	1670	546	70	752	367	97	138	151	263	93	157	813	564	145	150	431	60
	'49	155	77	89	2393	135	380	38	57	805	457	49	601	363	145	204	145	234	86	152	544	515	132	132	301	38
	'48	228	148	106	3625	185	782	63	74	976	345	94	1040	615	264	307	277	263	122	162	729	777	339	133	504	48
	'47	101	57	48	1129	74	148	37	15	452	194	27	252	229	88	84	114	81	41	63	163	274	95	63	127	27
	'46	50	4	25	266	40	39	6	3	157	120	11	83	51	26	13	22	40	18	16	60	65	21	35	31	2
	'45-'42	29	11	8	244	15	15	8	1	108	42	12	44	18	6	9	5	6	18	8	35	25	37	25	14	4
	'41	23	18	14	301	21	30	5	4	84	74	6	50	31	25	16	22	11	16	26	43	55	46	43	20	2
	'40	16	7	8	257	14	19	11	5	82	42	5	48	28	18	9	13	7	11	12	31	50	30	16	24	4
	'39	5	11	7	242	21	28	10	4	63	33	12	29	26	18	13	8	9	13	12	50	37	33	10	17	2
	'38	6	6	7	179	19	13	4	2	38	31	6	28	17	4	8	4	2	3	6	21	20	24	3	12	1
Before '38		32	101	22	1686	99	267	33	22	226	106	41	338	195	234	101	64	21	74	67	320	218	275	18	156	41
Unid.*		169	874	100	394	84	408	85	83	229	129	59	777	306	103	9	282	349	42	1003	1369	380	30	254	1192	153
Total		2480	3096	1174	90496	2670	9974	1047	1927	15026	5228	956	13060	5098	2078	2101	2044	2961	1601	4092	13190	9153	2702	1526	6214	1039

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

Passenger Cars in Use by Makes and by Model Year

As of July 1, 1956

Based on data from the Reuben H. Donnelley Corp.

Model Year	Total	Buick	Cadillac	Chevrolet	Chrysler	De Soto	Dodge	Ford	Hudson	Kaiser-Frazer-Henry J	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	All Others
1956	3,963,476	346,011	94,852	987,887	78,970	67,096	147,229	976,318	15,706	168	32,579	205,103	37,539	299,518	15,793	319,333	251,836	43,191	7,852	54,495
1955	6,700,917	700,506	127,206	1,636,049	147,506	108,050	262,297	1,348,362	39,890	499	25,635	312,702	91,202	550,924	49,977	607,185	522,344	109,930	16,517	44,138
1954	4,582,918	422,037	56,926	1,110,864	94,004	71,316	153,409	1,096,286	44,558	7,581	33,753	244,091	77,968	334,892	28,904	386,386	273,012	67,356	16,739	30,836
1953	5,700,487	452,919	97,374	1,290,270	151,910	120,213	289,758	1,168,988	58,736	39,059	37,003	288,315	113,684	314,075	81,890	569,509	391,362	145,754	51,568	38,040
1952	3,636,120	280,696	60,472	789,930	85,257	76,844	211,157	621,452	61,954	48,144	24,631	158,643	131,319	194,930	57,676	332,255	250,479	156,732	40,310	33,239
1951	5,290,075	385,891	95,901	1,163,727	130,736	91,221	249,265	919,092	111,950	172,554	27,901	276,634	195,268	256,980	85,533	519,681	336,965	224,829	33,565	32,382
1950	5,913,977	391,785	92,893	1,290,311	157,333	120,671	315,841	1,098,029	100,319	14,546	24,453	262,838	138,136	362,740	59,678	531,908	405,349	288,841	35,613	22,893
1949	4,434,174	264,448	80,888	946,388	123,905	97,056	264,013	890,398	112,282	57,589	46,179	229,621	90,829	236,712	71,021	502,987	263,585	107,302	32,179	15,012
1948	2,486,248	156,944	43,998	621,091	88,965	69,328	183,182	190,628	62,068	63,986	4,408	35,503	72,648	126,864	57,811	295,127	192,132	132,781	45,338	23,442
1947	2,162,001	153,384	45,031	532,819	69,155	53,895	170,243	282,602	33,985	40,353	6,707	53,099	51,120	112,131	22,091	252,590	153,275	86,369	36,082	7,070
1946	1,277,475	73,697	19,459	285,968	43,886	36,528	100,776	267,401	25,689	.....	3,784	44,648	35,125	54,880	14,214	154,002	78,233	10,416	26,729	2,060
'45-'42	294,056	15,197	6,254	84,302	6,704	4,920	18,939	54,512	3,710	.....	885	5,558	3,629	9,770	5,421	35,548	17,069	8,056	12,236	1,346
1941	1,126,528	77,398	25,774	364,752	39,822	23,278	59,551	170,689	9,425	.....	2,762	19,199	9,475	52,400	12,839	157,147	72,049	23,755	4,466	1,747
1940	755,465	58,500	9,797	234,078	20,714	15,078	49,598	133,145	6,172	.....	2,030	13,802	6,023	34,051	12,258	98,902	43,784	13,301	2,937	1,295
1939	419,680	26,923	6,121	143,331	10,597	8,459	29,031	67,912	2,726	.....	1,128	7,433	3,154	16,155	5,565	57,348	23,565	8,110	897	1,225
1938	206,417	18,022	2,768	77,161	5,320	4,006	13,454	26,879	1,432	.....	625	.....	2,028	7,310	3,468	28,936	10,494	2,965	757	772
Earlier	774,202	33,556	6,020	185,816	11,720	8,394	52,266	288,864	6,161	.....	1,334	.....	6,229	25,873	10,392	88,117	30,391	8,131	2,674	8,284
Unid.*	97,783	8,334	1,624	16,952	2,240	1,296	3,730	13,506	986	3,280	409	3,696	1,416	3,885	1,016	7,019	4,858	2,280	2,095	22,159
Total	49,803,977	4,043,248	923,357	11,741,695	1,268,744	979,649	2,573,739	9,619,065	697,709	447,761	278,206	2,160,885	1,066,592	2,994,090	595,547	4,944,040	3,320,782	1,440,099	368,554	340,215

Unid.*—Unidentified as to model year.

Summary of Passenger Cars in Use, by States

As of July 1, 1956

Based on data from the Reuben H. Donnelley Corp.

State	Units	% of Total
Alabama	775,554	1.56
Arizona	310,668	.62
Arkansas	372,615	.75
California	5,109,326	10.26
Colorado	554,845	1.11
Connecticut	780,576	1.57
Delaware	151,456	.30
Dist. of Columbia	195,592	.39
Florida	1,295,510	2.60
Georgia	915,361	1.84
Idaho	213,646	.43
Illinois	2,955,352	5.93
Indiana	1,462,164	2.94
Iowa	909,584	1.83
Kansas	743,417	1.49
Kentucky	750,475	1.51
Louisiana	725,174	1.46
Maine	249,632	.50
Maryland	721,582	1.45
Massachusetts	1,406,660	2.82
Michigan	2,484,605	4.99
Minnesota	1,065,784	2.14
Mississippi	408,922	.82
Missouri	1,191,030	2.39
Montana	213,619	.43
Nebraska	482,078	.97
Nevada	94,467	.19
New Hampshire	162,817	.33
New Jersey	1,790,711	3.60
New Mexico	229,566	.46
New York	4,015,524	8.06
North Carolina	1,085,436	2.18
North Dakota	192,679	.39
Ohio	2,962,947	5.95
Oklahoma	706,211	1.42
Oregon	603,632	1.21
Pennsylvania	3,134,941	6.29
Rhode Island	251,690	.51
South Carolina	578,952	1.16
South Dakota	215,524	.43
Tennessee	811,877	1.63
Texas	2,645,634	5.31
Utah	232,398	.47
Vermont	104,838	.21
Virginia	940,098	1.89
Washington	890,795	1.79
West Virginia	474,872	.95
Wisconsin	1,122,042	2.25
Wyoming	110,939	.22
Total	49,803,977	100.00

AND MODEL YEAR—*concluded*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
ALL OTHERS	'56	90	173	239	2301	219	7083	306	20	1682	199	1466	1111	299	228	77	247	1031	369	148	929	1750	287	518	45	54495
	'55	76	197	265	1430	155	4966	296	16	1319	283	834	222	244	234	122	314	1147	223	106	742	1341	191	481	39	44138
	'54	60	133	114	1031	101	3886	225	22	966	147	334	526	186	157	75	252	875	50	61	539	700	88	375	33	30838
	'53	77	164	124	1398	116	6525	275	20	1231	190	480	155	240	202	25	306	1035	86	65	622	935	88	348	40	39040
	'52	68	118	121	1364	135	3574	337	21	1160	217	576	267	207	318	26	380	1124	111	78	626	988	128	294	42	33239
	'51	86	77	103	1438	144	3987	480	11	1119	168	610	311	177	399	25	404	981	59	69	787	1031	158	249	30	32382
	'50	57	44	75	1100	103	2923	407	36	1023	148	450	344	167	239	37	345	1014	40	52	403	966	123	208	26	15012
	'49	60	23	55	839	95	1665	200	19	677	161	194	322	95	152	29	214	882	56	42	279	399	123	208	26	15012
	'48	106	31	70	1656	107	2520	373	38	1200	228	326	554	166	261	50	328	1545	64	41	523	996	178	282	41	23442
	'47	51	24	12	437	40	458	136	18	422	74	65	208	23	98	21	134	423	6	6	142	137	54	68	12	7076
	'45-'42	12	7	2	34	6	62	27	.....	33	10	10	41	11	7	1	77	115	1	1	67	42	1	26	7	1346
	'41	8	17	4	46	12	92	18	2	104	20	20	48	14	15	5	31	98	2	2	25	120	15	38	3	1747
	'40	10	11	3	23	7	79	13	7	69	16	14	61	11	11	1	37	55	1	1	15	47	15	14	9	1295
	'39	7	4	3	33	2	78	13	4	69	16	25	67	9	9	1	16	49	1	1	36	35	11	21	2	1225
	'38	3	6	1	26	10	55	11	2	30	9	6	41	7	9	2	8	23	1	2	16	25	3	11	2	772
Before '38		85	43	35	305	22	526	76	27	440	143	96	576	74	59	30	37	186	34	23	92	247	79	249	23	8264
Unid.*		65	14	105	54	67	1017	192	4	424	86	30	9664	23	7	5	158	817	1	3	42	251	13	238	16	22159
Total		934	1090	1335	13602	1353	39653	3413	270	12043	2142	5539	14566	1963	2428	545	3380	11529	1096	700	5927	9534	1604	3816	418	340215

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1956.

Trucks in Use by Makes and by Model Year

As of July 1, 1956

Based on Data from The Reuben H. Donnelley Corp.

Model Year	Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge, Ply-mouth	Fed-eral	Ford	G.M.C.	Inter-national	Mack	Pon-tiac	Reo	Stude-baker	White-Sterling	Willys	All Others	Total
1956	(1)	680	116,620	2,349	1,872	36,240	88	182,016	55,149	57,015	6,829	.....	1,975	4,465	8,189	8,628	6,577	488,692
1955	(1)	1,096	371,031	3,260	3,046	62,271	89	260,342	69,042	95,976	10,164	.....	2,627	12,744	12,340	10,716	8,638	923,404
1954	1,095	1,544	252,385	2,479	2,628	54,415	293	204,525	51,886	79,520	6,282	423	2,113	5,449	10,067	7,959	5,765	688,828
1953	1,348	1,852	281,336	2,922	2,697	83,273	584	239,888	85,815	79,143	5,875	968	3,119	24,839	10,418	13,851	5,729	843,657
1952	1,269	1,520	248,968	2,900	2,810	94,011	620	184,670	71,093	93,209	6,230	873	2,762	26,456	9,605	10,859	5,919	763,474
1951	1,741	2,029	344,483	3,704	4,011	84,282	820	239,155	82,193	90,125	9,414	1,249	2,634	30,989	10,849	19,679	6,803	933,160
1950	1,494	2,017	362,827	4,058	4,458	100,652	838	284,668	95,042	78,303	7,467	1,440	2,429	33,309	10,336	16,148	5,786	1,011,260
1949	1,188	1,194	299,390	3,377	3,513	97,492	670	175,843	61,900	85,122	4,909	1,054	2,568	63,997	5,881	18,421	5,023	831,542
1948	1,894	1,934	253,404	6,804	5,384	82,281	1,824	187,221	59,891	98,389	6,406	.....	6,674	19,150	8,056	35,334	6,841	789,457
1947	2,949	2,565	157,266	5,915	5,224	84,470	2,460	126,208	32,751	84,513	5,203	.....	4,945	26,996	6,839	15,158	6,246	576,708
1946	2,777	2,056	184,720	2,472	3,594	72,774	1,461	113,550	15,893	56,793	2,694	.....	3,955	15,839	5,618	11,284	5,883	501,353
1945	1,250	998	19,048	1,460	1,350	11,371	649	25,064	6,308	16,775	2,850	.....	1,243	1,622	3,276	1,253	2,218	96,535
1944	583	457	7,845	575	275	3,940	301	9,310	2,893	7,776	1,247	.....	257	790	1,401	499	997	38,548
1943	134	39	1,636	140	88	1,260	161	4,563	1,400	2,399	226	.....	89	281	513	662	450	14,041
1942	567	96	47,062	548	510	17,369	272	31,937	10,775	14,050	988	.....	614	980	1,336	1,795	1,462	130,361
1941	973	627	89,431	1,529	1,648	33,776	231	63,654	16,162	33,856	3,129	.....	390	2,234	2,398	757	2,503	253,298
1940	483	299	60,923	1,133	894	20,961	168	43,316	10,286	19,625	1,906	.....	92	445	979	648	1,937	164,086
1939	399	256	40,107	826	743	16,757	114	28,485	6,582	13,489	1,413	.....	104	538	617	195	1,329	111,956
1938	231	148	25,457	636	447	7,902	85	17,237	3,142	10,884	821	.....	284	361	501	246	1,065	69,447
Earlier	716	427	79,300	2,429	199	29,391	424	119,222	9,989	21,330	2,634	.....	1,159	1,227	1,990	348	7,349	278,134
Unid.*	391	153	8,846	242	113	3,099	61	7,425	2,749	3,106	634	2,119	291	785	611	679	4,855	36,141
Total	21,472	21,987	3,251,985	49,760	45,494	1,007,587	12,211	2,548,288	750,741	1,039,384	89,133	7,926	40,324	273,476	113,820	175,119	95,375	9,544,082

Unid.*—Unidentified as to model year. (1)—Included with White, Sterling.

Cars and Trucks in Use by Makes

Arranged in Descending Order, according to the July 1, 1956 Totals

Based on data from the Reuben H. Donnelley Corp.

PASSENGER CARS				TRUCKS			
Rank	Make	Number in Use	% of Total	Rank	Make	Number in Use	% of Total
1	Chevrolet	11,741,695	23.58	1	Chevrolet	3,251,985	34.08
2	Ford	9,619,065	19.31	2	Ford	2,548,288	26.70
3	Plymouth	4,944,040	9.93	3	International	1,039,384	10.89
4	Buick	4,043,248	8.12	4	Dodge, Plymouth	1,007,587	10.56
5	Pontiac	3,320,782	6.67	5	G. M. C.	750,741	7.87
6	Oldsmobile	2,994,090	6.01	6	Studebaker	273,476	2.87
7	Dodge	2,573,739	5.17	7	Willys	175,119	1.83
8	Mercury	2,160,885	4.34	8	White, Sterling	113,820	1.19
9	Studebaker	1,440,099	2.89	9	Mack	89,133	.93
10	Chrysler	1,268,744	2.55	10	Diamond T	49,760	.52
11	Nash	1,066,592	2.14	11	Divco	45,494	.48
12	De Soto	979,649	1.97	12	Reo	40,324	.42
13	Cadillac	923,357	1.85	13	Brockway	21,987	.23
14	Hudson	697,709	1.40	14	Autocar	21,472	.22
15	Packard	595,547	1.20	15	Federal	12,211	.13
16	Kaiser, Frazer, Henry J.	447,781	.90	16	Pontiac	7,926	.08
17	Willys	368,554	.74	17	All Others	95,375	1.00
18	Lincoln	278,206	.56				
19	All Others	340,215	.67				
	Total—Cars	49,803,977	100.00		Total—Trucks	9,544,082	100.00

EXPORTS

U. S. Exports of New Motor Vehicles, 1925-1956

In Units and Their Value

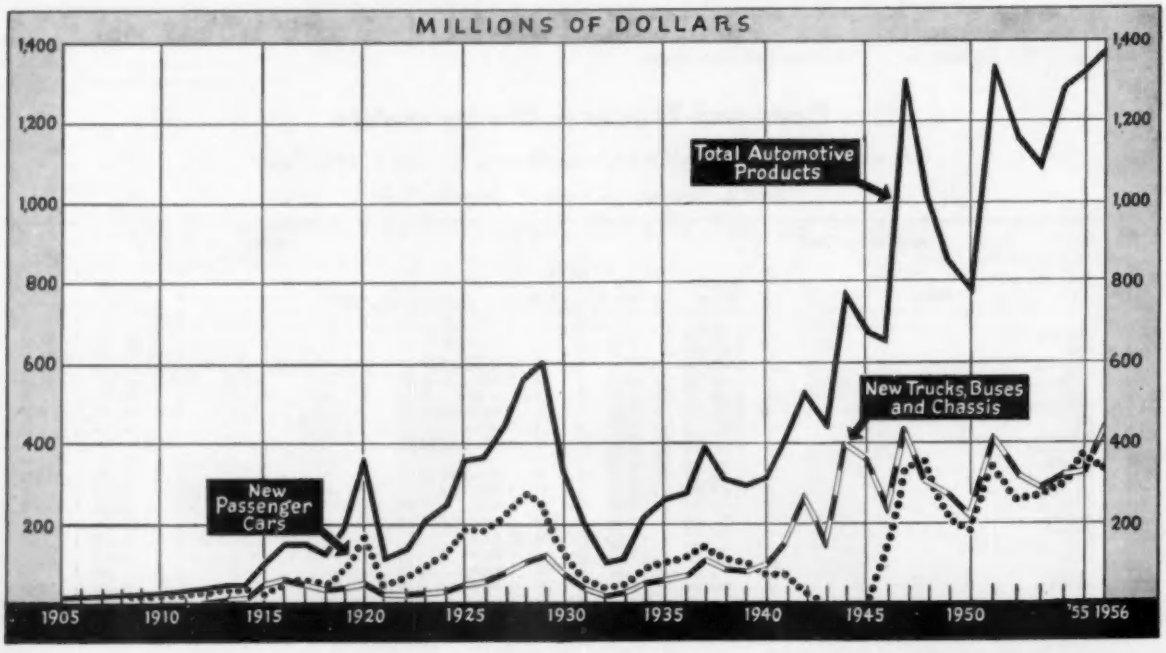
Compiled by Automotive Division, Business and Defense Services Administration, from records of the Bureau of the Census
1956 Data Compiled by Automobile Manufacturers Association, from records of the Bureau of the Census

	PASSENGER CARS			TRUCKS, BUSES AND CHASSIS			TOTAL MOTOR VEHICLES		
Year	Number	Value	% of U. S. Production (Units)	Number	Value	% of U. S. Production (Units)	Number	Value	% of U. S. Production (Units)
1925	244,306	$184,885,830	6.5	58,625	$37,703,402	11.0	302,931	$222,589,232	7.1
1926	238,540	176,432,157	6.3	66,880	47,176,107	21.1	305,420	223,608,264	7.1
1927	278,748	207,966,456	9.5	105,447	70,123,600	22.7	384,195	278,090,056	11.2
1928†	375,428	269,393,369	9.8	140,191	93,006,070	25.8	515,619	362,399,439	11.8
1929	346,630	239,334,000	7.5	197,872	112,607,985	25.6	544,502	351,941,985	10.1
1930	159,464	110,355,978	5.7	85,666	56,861,119	14.9	245,130	167,217,097	7.3
1931	86,437	52,851,585	4.3	49,415	26,210,975	11.8	135,852	79,062,560	5.6
1932	44,282	25,502,047	3.8	25,532	12,142,681	10.8	69,814	37,644,728	5.1
1933	67,355	33,945,464	4.2	44,103	20,691,338	12.7	111,458	54,636,802	5.8
1934	148,387	80,604,563	6.8	93,766	45,125,359	16.3	242,153	125,729,922	3.7
1935	179,470	99,342,411	5.5	100,668	51,995,938	14.4	280,138	151,338,349	7.0
1936	186,542	107,483,285	5.1	108,167	56,765,713	13.7	294,709	164,248,998	6.6
1937	237,719	140,638,203	6.0	169,076	102,889,939	18.9	406,795	243,528,142	8.4
1938	167,693	104,628,982	8.4	117,943	74,451,986	24.1	285,636	179,080,968	11.4
1939	143,909	87,171,300	5.0	116,913	71,422,015	16.4	260,822	158,593,315	7.2
1940	88,806	57,253,737	2.6	103,459	87,867,077	13.7	192,265	145,120,814	4.5
1941	81,746	60,702,648	2.4	147,132	148,149,880	13.9	228,878	208,852,528	5.0
1942	13,951	13,199,744	‡	156,344	258,241,298	19.1	170,295	271,441,042	....
1943	2,088	2,420,506	‡	74,847	145,772,105	10.7	76,935	148,192,611	....
1944	1,649	2,784,432	‡	175,080	399,795,242	23.8	176,729	402,579,675	....
1945	1,206	1,447,376	1.7	142,338	348,327,144	21.7	143,544	349,774,520	19.8
1946	116,994	122,500,568	5.4	167,980	225,979,505	17.8	284,974	348,430,073	9.2
1947	266,795	335,330,528	7.5	267,589	429,755,475	21.6	534,384	765,086,003	11.1
1948	217,911	279,837,012	5.6	204,831	343,160,170	14.8	422,742	709,592,487	8.0
1949	140,186*	205,022,791	2.7	133,963*	228,147,610	11.9	274,149*	433,170,401	4.4
1950	120,285	179,324,979	1.8	130,176	216,029,884	9.7	250,461	395,354,863	3.1
1951	216,973	340,031,796	4.1	216,692	409,290,971	15.2	433,665	749,322,767	6.4
1952	141,026	243,976,057	3.3	155,461	313,753,917	12.8	296,487	557,729,974	5.4
1953	154,459	276,020,378	2.5	133,550	264,048,957	11.1	288,009	540,069,335	3.9
1954	173,312	300,861,719	3.1	183,460	332,513,423	17.6	356,772	633,375,142	5.4
1955	211,611	380,641,838	2.7	176,051	342,073,835	14.1	387,662	722,715,673	4.2
1956	173,851	331,238,744	3.0	194,555	438,387,631	17.7	368,406	769,626,375	5.3

‡—Taken from stockpiles. †—From 1928 through 1941 exports include shipments in non-contiguous territories. *—Does not include military vehicles for last six months of 1949.

NOTE—Prior to 1931 figures include used vehicles, but the effect of these used vehicles on per cent of production is negligible.

1956 NEW CAR EXPORTS DOWN, BUT TRUCKS INCREASE



U. S. Exports of Automotive Products, 1954-1956

Vehicles, Engines, Parts and Equipment

1956 Data Compiled by Automobile Manufacturers Association, from records of Bureau of the Census
All Other Years by Automotive Industries, from records of the Bureau of the Census

	1956		1955		1954	
VEHICLES	**Number**	**Value**	**Number**	**Value**	**Number**	**Value**
Passenger Cars and Chassis, New	173,851	$331,238,744	211,611	$380,641,838	173,312	$300,861,719
Passenger Cars and Chassis, Used	8,196	7,177,200	6,663	6,671,088	5,134	6,424,726
Trucks, Busses and Chassis, New	194,555	438,387,631	176,051	342,073,835	183,460	336,471,423
Trucks, Busses and Chassis, Used	4,349	7,558,546	3,810	6,441,555	3,609	5,333,720
Special Purpose Vehicles, New	1,561	10,007,058	1,111	6,356,328	1,190	5,654,014
Special Purpose Vehicles, Used	166	492,795	313	674,410	160	323,794
Trailers	9,819	20,862,423	5,051	12,080,127	4,154	8,854,236
Motorcycles	....	1,470,126	1,205	1,038,424	1,378	1,112,212
Total—New and Used Vehicles	392,497	$817,194,533	405,815	$755,977,605	372,397	$665,035,844
ENGINES						
Diesel, truck and bus, for assembly	34,317	$9,475,884	372	$1,707,905	25	$47,649
Gasoline, truck and bus, for assembly			7,945	2,959,713	6,961	2,780,366
Passenger car, for assembly			16,178	2,314,098	9,581	1,453,925
Diesel, for replacement	26,080	11,067,294	1,756	3,457,386	1,045	2,283,098
Gasoline, for replacement			21,807	4,865,017	16,506	4,402,856
Total—Engines	60,397	$20,543,178	48,058	$15,304,119	34,118	$10,967,894
PARTS FOR ASSEMBLY						
Bodies, truck and bus	5,318	$4,354,257	6,515	$5,181,242	5,025	$3,680,529
Bodies, passenger car			559	170,845	159	60,024
Parts for cars, trucks and buses	....	234,752,990	....	208,549,790	....	149,703,879
Total—Parts for Assembly	....	$239,107,247	....	$213,901,877	....	$153,372,432
REPLACEMENT PARTS						
Trailer parts	....	$4,805,900	....	$3,279,704	....	$2,171,337
Motorcycle parts	....	.....	....	453,511	....	727,366
Bodies, truck and bus	....	.....	1,290	889,509	1,127	825,058
Springs, leaf and leaves	....	4,136,035	....	3,813,674	....	4,487,537
Shock absorbers and parts	....	3,520,540	....	4,016,052	....	3,771,904
Instruments for motor vehicles	....	590,838	....	925,209	....	974,408
Motor vehicle parts, n.e.c.	....	241,854,171	....	215,380,066	....	180,053,432
Heaters, air conditioners and parts	....	954,405	....	2,464,535	....	2,070,900
Accessories and parts	....	6,929,434	....	5,916,238	.....	4,846,411
Batteries, storage, 6 and 12 volt	360,701	5,205,739	465,227	7,176,188	409,150	5,839,403
Spark plugs	23,370,659	7,060,950	23,367,122	6,978,885	18,203,345	5,441,072
Starting, lighting and ignition equipment	....	30,682,332	....	26,760,451	....	24,610,094
Clutch facings	....	5,855,437	1,182,728	927,597	....	879,458
Brake lining	....		....	4,995,315	....	4,620,416
Total—Replacement Parts	....	$311,595,781	....	$283,976,934	....	$241,318,796
GARAGE EQUIPMENT						
Service appliances and parts	....	$14,471,183	....	$13,334,736	....	$11,402,915
Pumps, gasoline and oil	31,967	7,211,447	25,463	5,473,088	19,588	4,808,591
Lubrication equipment and parts	....	7,258,088	....	5,865,565	....	4,901,723
Total—Garage Equipment	....	$28,940,718	....	$24,673,389	....	$21,113,229
TIRES AND TUBES						
Casings, truck and bus	....	$91,599,948	808,344	$38,701,110	746,477	$33,554,004
Casings, passenger car and motorcycle, and n.e.c.	....		1,152,372	12,971,774	886,865	11,244,975
Casings, off-the-road vehicles, excl. tractors	....		144,776	16,604,009	148,076	14,670,009
Tubes, inner, passenger cars	....		496,430	1,110,375	334,708	665,430
Tubes, inner, truck and bus	....		557,160	2,343,690	493,076	1,983,985
Tires, solid	....		84,150	491,854	92,931	407,147
Camelback, lb.	....	8,112,511	9,905,889	2,952,510	8,207,495	2,329,813
Tire sundries and repair material, lb.	....		4,440,019	4,346,447	2,778,783	3,447,335
Total—Tires and Tubes	....	$99,712,459	....	$79,521,769	....	$68,302,698
Total—All Automotive Products	....	$1,517,093,916	....	$1,373,355,693	....	$1,160,110,893

For U. S. Engine Exports by Hp. Groups, see Page 318.

1956 U. S. Automotive Imports

Compiled by the Automobile Manufacturers Association from the records of the Bureau of the Census

	New Passenger Cars		Truck and Bus Chassis		Used Vehicles		Auto. Parts Value	Total Value of Imports
Imports from	**Number**	**Value**	**Number**	**Value**	**Number**	**Value**		
Canada	443	$652,660	150	$273,320	302	$189,683	$2,785,534	$3,901,197
West Germany	59,911	64,039,035	2,718	3,132,575	692	813,276	3,523,622	71,508,508
United Kingdom	36,452	48,649,961	97	186,519	350	483,448	4,677,426	53,997,354
Belgium	357	395,119	....	....	15	18,070	12,094	425,283
France	5,566	5,922,184	1	2,013	68	84,522	310,084	6,318,803
Italy	1,052	2,198,517	1	1,800	54	114,799	350,291	2,665,407
Netherlands	410	492,450	13	14,148	24	31,655	248,151	786,404
Switzerland	3	1,937	....	....	....	....	67,416	69,353
Japan	8	8,493	3	1,444	....	....	46,134	56,071
Sweden	3,454	4,140,610	....	....	21	24,698	232,055	4,397,363
Czechoslovakia	6	4,798	....	....	1	905	....	5,703
Union of S. Africa	....	....	....	....	....	....	395	395
All other countries	14	24,532	1	12,122	9	8,465	24,473	69,597
Total Imports	107,675	$126,530,296	2,984	$3,623,941	1,536	$1,769,521	$12,277,680	$144,201,438

/ PASSENGER CARS

U. S. Passenger Car Engine Trends

Average Car Weight and Engine Hp.

Based on Number of Units Sold

	No. of Units Sold*	Gross Shipping Wgt. of Cars Sold (lb.)†	Gross Max. Hp. of Cars Sold‡	Average Weight (lb.)	Average Hp.
1930	2,625,979	7,320,000,000	142,800,000	2,780	54
1931	1,908,141	5,380,000,000	109,200,000	2,820	57
1932	1,096,399	3,200,000,000	75,400,000	2,920	69
1933	1,493,794	4,220,000,000	106,000,000	2,820	71
1934	1,888,557	5,560,000,000	156,000,000	2,940	83
1935	2,743,908	8,120,000,000	234,000,000	2,960	85
1936	3,404,487	10,190,000,000	291,000,000	3,000	86
1937	3,483,752	10,470,000,000	303,900,000	3,005	87
1938	1,891,021	5,743,000,000	169,200,000	3,035	89
1939	2,653,377	7,950,000,000	239,200,000	2,996	90
1940	3,415,905	10,511,000,000	312,100,000	3,077	91
1941	3,731,166	11,793,000,000	356,800,000	3,161	96
1946	1,815,196	599,600,000	181,200,000	3,303	100
1947	3,167,231	10,528,700,000	317,400,000	3,324	100
1948	3,490,952	11,552,200,000	352,600,000	3,309	100
1949	4,838,342	15,901,000,000	500,100,000	3,286	104
1950	6,326,436	20,624,200,000	660,400,000	3,260	104
1951	5,060,903	16,491,586,000	541,970,081	3,259	107
1952	4,158,394	13,626,614,000	467,487,469	3,348	112
1953	5,738,989	19,208,005,555	690,604,332	3,436	131
1954	5,535,464	18,706,481,077	749,762,007	3,380	135
1955	7,169,908	24,409,698,004	1,202,887,133	3,404	168
1956	5,955,248	20,383,147,845	1,105,273,294	3,423	186

† Shipping weight of 5 passenger, 4 door sedan taken as typical and used in conjunction with new registrations of each model.
‡ Maximum horsepower taken from previous Statistical Issues and used in conjunction with new registrations of each model.
* R. L. Polk & Co. registrations of new passenger cars.

Progress in Engine Design

Average for Passenger Car Engines—Based on Number of Chassis Models Offered for Years 1934-1952
Based on Engine Models for 1953-1957

	Average Piston Speeds (Ft. per Min.)	Average Displacement per Cylinder (Cu. In.)	Average Number of Cylinders	Average R.P.M. at Max. B.H.P.	Average Brake Horsepower
1934	2508	36.2	7.97	3420	112.5
1935	2535	36.1	7.51	3480	109.6
1936	2498	35.6	7.50	3487	110.1
1937	2554	35.8	7.74	3556	115.9
1938	2545	35.7	7.60	3576	111.7
1939	2486	35.1	7.28	3543	105.9
1940	2490	35.0	7.25	3590	107.9
1941	2492	35.2	7.15	3603	110.9
1942	2534	34.9	7.20	3638	112.5
1946	2522	35.4	6.97	3682	108.4
1947	2550	35.8	7.00	3660	109.4
1948	2492	35.6	6.95	3629	107.9
1949	2522	36.8	6.80	3690	113.3
1950	2505	37.2	6.88	3657	116.6
1951	2505	36.8	6.80	3758	118.0
1952	2523	36.6	6.87	3823	122.8
1953	2560	36.1	6.69	3869	125.0
1954	2589	36.8	6.78	3953	140.8
1955	2585	36.7	7.40	4284	173.8
1956	2634	39.6	7.51	4353	207.9
1957	2724	39.9	7.62	4540	232.6

	Average Hp. per Cu. In. of Displacement	Average Compression Ratio	Average B. M. E. P. at Maximum Hp. (lb. per sq. in.)	Bore, Stroke and Displacement		
				Bore (In.)	Stroke (In.)	Disp. (Cu. In.)
1934	.398	5.72	90.1	3.24	4.40	289.2
1935	.398	5.98	90.2	3.23	4.39	271.4
1936	.411	6.14	92.3	3.39	4.32	287.9
1937	.417	6.25	93.1	3.25	4.31	277.6
1938	.412	6.32	91.2	3.25	4.27	271.1
1939	.415	6.32	92.7	3.24	4.23	255.3
1940	.426	6.41	93.9	3.25	4.17	254.6
1941	.431	6.63	96.7	3.26	4.15	252.1
1942	.446	6.80	96.5	3.26	4.16	251.8
1946	.440	6.77	94.6	3.27	4.11	246.4
1947	.437	6.73	94.5	3.28	4.16	250.4
1948	.437	6.78	95.3	3.29	4.12	247.1
1949	.453	6.93	97.3	3.35	4.10	250.0
1950	.455	7.00	98.6	3.37	4.11	256.1
1951	.474	7.09	99.5	3.40	4.00	250.4
1952	.488	7.14	101.4	3.39	3.96	251.6
1953	.518	7.31	106.0	3.40	3.97	241.4
1954	.564	7.31	113.1	3.46	3.93	249.5
1955	.639	7.87	118.1	3.62	3.57	271.8
1956	.691	8.47	127.2	3.72	3.63	297.3
1957	.765	8.75	133.4	3.74	3.60	304.1

1957 / PASSENGER CARS

PRICE • WEIGHT • BODIES •

Following are prices at factory for cars with standard equipment as of February 26, 1957. State or local taxes, transportation and finance charges and optional equipment are extra.

AMERICAN MOTORS CORP.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
HUDSON				
Super				
Sedan, 4d	2520	230	2750	3631
Hollywood, 2d	2604	236	2840	3655
Custom				
Sedan, 4d	2397	243	2640	3678
Hollywood, 2d	2781	249	3030	3693
METROPOLITAN*				
Hardtop	1406	121	1527	1825
Convertible	1428	123	1551	1785
NASH				
Amb. Super				
Sedan, 4d	2520	230	2750	3639
Ctry. Club, 2d	2604	236	2840	3655
Amb. Cust.				
Sedan, 4d	2697	243	2940	3701
Ctry. Club, 2d	2781	249	3030	3722
RAMBLER				
DeLuxe 6				
Sedan, 4d	1757	163	1920	2911
Super 6				
Sedan, 4d	1890	175	2065	2914
Sed. Hdt., 4d	1969	181	2150	2936
Sta. Wagon, 4d	2156	194	2352	3042
Custom 6				
Sedan, 4d	1974	181	2155	2938
Sta. Wagon, 4d	2242	200	2442	3076
Super 8				
Sedan, 4d	2011	184	2195	3223
Sta. Wagon, 4d	2279	203	2482	3359
Custom 8				
Sedan, 4d	2095	190	2285	3259
Hard Top, 4d	2174	196	2370	3269
Sta. Wagon, 4d	2363	209	2572	3392
Hdt.Sta.Wag.4d	2442	.....	2657	3409

CHRYSLER CORP.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
CHRYSLER				
Windsor				
Sedan, 4d	2811	222	3033	3995
Hardtop, 2d	2871	227	3098	3925
Hardtop, 4d	2931	231	3162	4030
Twn. & Ctry.	3264	256	3520	4210
Saratoga				
Sedan, 4d	3392	266	3658	4165
Hardtop, 2d	3426	268	3694	4075
Hardtop, 4d	3498	274	3772	4195
New Yorker				
Sedan, 4d	3809	299	4108	4315
Hardtop, 2d	3836	301	4137	4220
Hardtop, 4d	3889	305	4194	4330
Conv. Coupe	4242	331	4573	4365
Twn. & Ctry.	4342	339	4681	4490
300C				
Hardtop, 2d	4513	351	4864	4235
Conv. Coupe	4913	381	5294	4380
DE SOTO				
Firesweep				
Sedan, 4d	2529	203	2732	3675
Sportsman, 2d	2583	208	2791	3645
Sportsman, 4d	2654	213	2867	3720
Sta. Wagon, 2s	2893	231	3124	3965
Sta. Wagon, 3s	3024	241	3265	3970
Firedome				
Sedan, 4d	2692	216	2908	3955
Sportsman, 2d	2810	225	3035	3910
Sportsman, 4d	2863	229	3092	3960
Conv. Coupe	3087	244	3311	4085
Fireflite				
Sedan, 4d	3179	253	3432	4025
Sportsman, 2d	3297	262	3559	4000
Sportsman, 4d	3350	268	3618	4125
Conv. Coupe	3554	281	3835	4095
Sta. Wagon, 2s	3639	288	3927	4290
Sta. Wagon, 3s	3771	298	4069	4250
Adventurer				
Sedan, 2d	3653	289	3942	4040
Convertible	3909	308	4217	4235
DODGE				
Coronet 6				
Club Sedan	2162	173	2335	3400
Sedan, 4d	2237	179	2416	3470

CHRYSLER CORP. cont'd

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
DODGE, Cont'd				
Coronet V8				
Club Sedan	2262	181	2443	3530
Sedan, 4d	2337	187	2524	3620
Lancer, 2d	2357	188	2545	3570
Lancer, 4d	2436	194	2630	3665
Convertible	2600	207	2807	3815
Coronet D501				
Club Sedan	3039	240	3279	.....
Convertible	3370	265	3635	.....
Royal V8				
Sedan, 4d	2479	198	2677	3820
Lancer, 2d	2532	202	2734	3585
Lancer, 4d	2578	205	2783	3690
Cust. Royal V8				
Sedan, 4d	2637	209	2846	3690
Lancer, 2d	2673	212	2885	3670
Lancer, 4d	2739	217	2956	3750
Convertible	2883	228	3111	3810
Sta. Wagons				
Suburban, 6p	2618	208	2826	3830
Sierra, 6p, 2 st.	2697	214	2911	3930
Sierra, 9p, 3 st.	2815	223	3038	4015
Cu. Sier., 6p, 2st.	2628	224	3052	3960
Cu. Sier., 9p, 3st.	2947	233	3180	4030
IMPERIAL				
Southampt., 2d	4321	340	4661	4640
Sedan, 4d	4416	347	4763	4640
Southampt., 4d	4416	347	4763	4780
Crown Imp.				
Southampt., 2d	4817	377	5194	4755
Sedan, 4d	4945	336	5331	4740
Southampt., 4d	4945	386	5331	4920
Conv. Coupe	5123	400	5523	4830
Le Baron				
Sedan, 4d	5258	410	5668	4765
Southampt. 4d	5258	410	5668	4900
PLYMOUTH				
Plaza V8▲				
Bus. Coupe	1825	149	1974	3315
Club Sedan	1927	157	2084	3330
Sedan, 4d	1970	160	2130	3405
Savoy V8				
Club Sedan	2056	166	2222	3335
Sedan, 4d	2099	170	2269	3415
Sport Coupe	2132	172	2304	3410
Sport Sedan				3480
Belvedere V8				
Club Sedan	2164	175	2339	3340
Sedan, 4d	2207	178	2385	3475
Sport Coupe	2243	181	2424	3415
Sport Sedan	2308	186	2494	3505
Conv. Coupe	2419	194	2613	3585
Suburban V8				
Deluxe, 2d	2226	179	2405	3685
Custom, 2d	2328	187	2515	3755
Custom, 4d	2378	191	2569	3840
Sport, 4d	2497	200	2697	3840
Fury V8				
Sport Coupe	2686	214	2900	3595

FORD MOTOR CO.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
CONTINENTAL				
Hardtop	8938	682	9620	4797
FORD▲				
Custom V8				
Bus. Tudor	1807	.....	.....	3276
Tudor	1911	.....	.....	3319
Fordor	1958	.....	.....	3267
Cust. 300 V8				
Tudor	2018	.....	.....	3289
Fordor	2065	.....	.....	3334
Fairlane V8				
Club Sedan, 2d	2138	.....	.....	3392
Town Sedan, 4d	2185	.....	.....	3437
Victoria, 2d	2191	.....	.....	3427
Victoria, 4d	2252	.....	.....	3471
Friane 500 V8				
Club Sedan, 2d	2181	.....	.....	3407
Town Sedan, 4d	2228	.....	.....	3452
Victoria, 2d	2234	.....	.....	3442
Victoria, 4d	2295	.....	.....	3487
Sunliner	2389	.....	.....	3597
Sta. Wags. V8				
Ranch	2199	.....	.....	3520
Del Rio	2289	.....	.....	3527
Ctry. Sed., 6p	2339	.....	.....	3590
Ctry. Sed., 9p	2437	.....	.....	3679
Ctry. Squire	2556	.....	.....	3693
Thunderbird-8				
Convertible	3088	.....	.....	3134
Hardtop	3158	.....	.....	3299

FORD MOTOR CO. cont'd

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
LINCOLN				
Capri				
Coupe	4203	.....	.....	4585
Sedan, 4d	4339	.....	.....	
Hardtop, 4d	4339	.....	.....	
Premier				
Coupe	4668	.....	.....	4620
Sedan, 4d	4804	358	5162	4710
Hardtop	4804	358	5162	4660
MERCURY				
Monterey				
Sedan, 2d	2352	.....	.....	3875
Sedan, 4d	2417	.....	.....	3915
Phaeton, 2d	2462	.....	.....	3870
Phaeton, 4d	2527	.....	.....	3890
Convertible	2752	.....	.....	4035
Montclair				
Sedan, 4d	2922	.....	.....	3925
Phaeton, 2d	2967	.....	.....	3900
Phaeton, 4d	3042	.....	.....	3905
Convertible	3147	.....	.....	4010
Tnpk. Cruis.				
Sedan, 2d	3452	.....	.....	4005
Sedan, 4d	3537	.....	.....	4015
Conv. Cruis.				
Sedan, 2d	2352	.....	.....	
Sedan, 4d	2417	.....	.....	
Phaeton, 2d	2462	.....	.....	
Phaeton, 4d	2752	.....	.....	
Montclair	3733	.....	.....	
Sta. Wagons				
Commut., 2d, 6p	2657	.....	.....	4115
Commut., 4d, 6p	2722	.....	.....	4195
Commut., 4d, 9p	2812	.....	.....	
Voyager, 2d, 6p	3122	.....	.....	4240
Voyager, 4d, 9p	3277	.....	.....	
Col. Pk., 4d, 9p	3377	.....	.....	

GENERAL MOTORS CORP.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
BUICK				
Special 40				
Sedan, 2d	2352	244	2596	3955
Sedan, 4d	2412	248	2660	4012
Riviera, 2d	2453	251	2704	3956
Riviera, 4d	2524	256	2780	4041
Conv. Coupe	2716	271	2987	4082
Est. Wagon	2772	275	3047	4292
Riv. Est. Wag.	2884	283	3167	4309
Century 60				
Sedan, 4d	2932	302	3234	4137
Riviera, 2d	2966	304	3270	4081
Riviera, 4d	3044	310	3354	4163
Conv. Coupe	3271	327	3598	4234
Riv. Est. Wag.	3372	334	3706	4423
Super 50				
Riviera, 2d	3206	328	3536	4271
Riviera, 4d	3343	338	3681	4356
Conv. Coupe	3548	433	3981	4414
Roadmastr. 70				
Riviera, 2d	3578	366	3944	4374
Riviera, 2d, A	3578	366	3944	4374
Riviera, 4d	3680	373	4053	4469
Riviera, 4d, A	3680	373	4053	4469
Conv. Coupe	3692	374	4066	4500
CADILLAC				
Series 62				
Coupe	4225	.....	.....	4585
Sedan	4372	.....	.....	4595
Coupe de Ville	4685	.....	.....	4620
Sedan de Ville	4815	.....	.....	4655
Convertible	4850	.....	.....	4730
Eldo. Seville	6711	.....	.....	4810
Eldo. Biarritz	6711	.....	.....	4930
Series 60				
Special Sedan	5124	.....	.....	4755
Series 75				
Sedan, 8p	6800	.....	.....	5340
Limousine	7020	.....	.....	5390
CHEVROLET•				
One-Fifty V8				
Utility Sedan	1799	186	1985	3199
Sedan, 2d	1902	194	2096	3238
Sedan, 4d	1950	198	2148	3261
Sta. Wag., 2d	2191	216	2407	3406
Two-Ten V8				
Sedan, 2d	2019	203	2222	3253
Delray Coupe	2056	206	2262	3257

GENERAL MOTORS, cont'd

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
CHEVROLET, Cont'd.				
Sedan, 4d	2067	207	2274	3300
Sport Coupe	2095	209	2304	3292
Sport Sedan	2156	214	2370	3359
Sta. Wag., 2d	2279	223	2502	3430
Sta. Wag., 4d	2329	227	2556	3471
Sta. Wag., 9p	2429	234	2663	3580
Bel Air V8				
Sedan, 2d	2127	211	2338	3265
Sedan, 4d	2175	215	2390	3304
Sport Coupe	2183	216	2399	3306
Sport Sedan	2244	220	2464	3368
Convertible	2380	231	2611	3436
Sta. Wag., 4d	2444	236	2680	3474
Sta. Wag., 2d	2609	248	2857	3460
Corvette V8				
Convertible	3176	289	3465	2730
OLDSMOBILE				
Series 88				
Sedan, 2d	2478	.....	.....	3942
Sedan, 4d	2538	.....	.....	4000
Holiday Cpe.	2591	.....	.....	3963
Holiday Sed.	2663	.....	.....	4052
Convertible	2695	.....	.....	4232
Fiesta Sed.	2914	.....	.....	4281
Fiesta	3017	.....	.....	4314
Super 88				
Sedan, 2d	2687	.....	.....	4001
Sedan, 4d	2745	.....	.....	4044
Holiday Cpe	2884	.....	.....	4010
Holiday Sed.	2956	.....	.....	4117
Convertible	3132	.....	.....	4283
Fiesta	3220	.....	.....	4364
Series 98				
Sedan, 4d	3396	.....	.....	4322
Holiday Cpe.	3578	.....	.....	4296
Holiday Sed.	3649	.....	.....	4385
Convertible	3838	.....	.....	4572
PONTIAC				
Chieftain				
Sedan, 2d	2234	229	2463	3515
Sedan, 4d	2293	234	2527	3560
Catal. Cpe.	2295	234	2529	3515
Catal. Sedan	2374	240	2614	3535
Sta. Wag., 2d	2584	257	2841	3690
Sta. Wag., 4d	2637	261	2898	3835
Super Chief				
Sedan, 4d	2420	244	2664	3585
Catal. Coupe	2486	249	2735	3570
Catal. Sedan	2540	253	2793	3640
Sta. Wag., 4d.	2752	269	3021	3765
Star Chief				
Sedan, 4d	2583	256	2839	3630
Cust. Sed., 4d	2636	260	2896	3635
Cust. Cat. Cpe.	2640	261	2901	3640
Cust. Cat. Sed.	2709	266	2975	3710
Conv. Coupe	2830	275	3105	3860
Sta. Wagon, 2d	3179	302	3481	3750
Sta. Wagon, 4d	3323	313	3636	3845
Cus. Bon. Cpe.	5318	464	5782	4285

STUDE.-PACK. CORP.

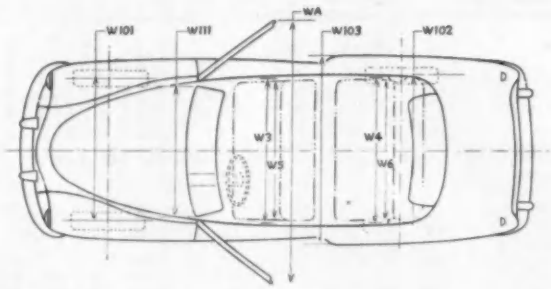
BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
PACKARD				
Sedan, 4d	2933	.....	.....	3570
Sta. Wag., 4d	3093	.....	.....	3650
STUDEBAKER				
Champion				
Cus. Sedan, 2d	1823	178	2001	2755
Cus. Sedan, 4d	1868	181	2049	2785
Del. Sedan, 2d.	1936	187	2123	2780
Del. Sedan, 4d.	1981	190	2171	2810
Commander				
Cus. Sedan, 2d	1931	193	2124	3075
Cus. Sedan, 4d	1976	197	2173	3105
Del. Sedan, 2d.	2044	202	2246	3100
Del. Sedan, 4d.	2089	206	2295	3140
President				
Sedan, 2d	2147	211	2358	3170
Sedan, 4d	2193	214	2407	3205
Classic, 4d	2314	225	2539	3270
Hawk				
Silver Coupe	1954	188	2142	2790
Silver Coupe	2059	204	2263	3165
Golden Hdtop.	2912	270	3182	3400
Sta. Wagons				
Pelham	2178	206	2382	3015
Parkview	2284	221	2505	3310
Provincial	2336	225	2561	3350
Broadmoor	2433	233	2666	3415

▲ Prices of 6 cyl. models are $93 less than 8 cyl. models.

• Prices of 6 cyl. models are $100 less than 8 cyl. models.

* F. O. B. coastal port of entry.

WIDTH DIMENSIONS



1957 PASSENGER CAR BODY DATA

All dimensions apply to 5 or 6 passenger, 4 door sedan or equivalent model.

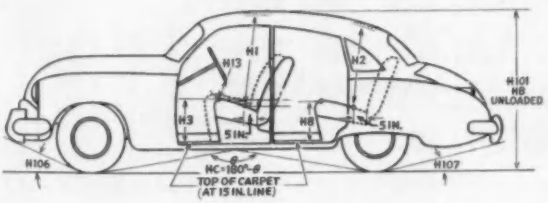
PASSENGER CAR MAKE AND MODEL	MISCELLANEOUS								GENERAL DIMENSIONS (Ins.)									
	Glass Area (Sq. In.)								L101	Overhang		Tread		Overall Dimensions				W111
	Windshield	Back Light	Type of Finish	Hood Opening	Hood Counterbalanced	Hood Release Control	Windshield Type	Rear Window Type	Wheelbase	L104 Front—Including Bumper Guards	L105 Rear—Including Bumper Guards	W101 Front	W102 Rear	L103 Length—Bumper to Bumper	W103 Width	WA Width—Doors Open	HB Height—Unloaded	Windshield—Max. Width
AMERICAN MOTORS CORP.																		
Hudson Hornet 35780	1100.0	1008.0	E	Ff	Y	In	C	C	121.3	34.9	53.1[1]	59.1	60.5	209.3[2]	78.0	148.3	61.9	62.3
Metropolitan 562	569.0	821.0	E	Ff	N	Ex	F	3C	85 0	28.4	36.2	45.3	44.8	149.5	61.5	135.0	55.5	43.8
Nash Ambassador 5780	1100.0	1008.0	E	Ff	Y	In	C	C	121.3	34.9	53.1[1]	59.1	60.5	209.3[2]	78.0	148.3	61.9	62.3
Rambler 5710	1105.7	1078.6	E	Ff	Y	Ex	C	C	108.0	32.0	51.2[3]	57.8	58.0	191.1[4]	71.3	145.0	59 4[5]	59.8
5720	1105.7	1078.6	E	Ff	Y	Ex	C	C	108.0	32.0	51.2[3]	57.8	58.0	191.1[4]	71.3	145.0	59.8	59.8
CHRYSLER CORP.																		
Chrysler Wind. C-75-1, Sara. C-75-2	1144.0	1319.0	E	Ff	Y	Ex	C	C	126.0	34.0	59.2	61.0	59.7	219.2	78.8	156.8	58 6	63.2
New Yorker C-76	1444.0	1319.0	E	Ff	Y	Ex	C	C	126.0	34.0	59.2	61.2	59.7	219.2	78.8	156.8	58 8	63.2
300C, C-76-300	1436.0	1882.0	E	Ff	Y	Ex	C	C	126.0	34.0	59.2	61.2	60.0	219.2	78.8	167.4	53 3	63.2
De Soto Firesweep S-27	1444.0	1319.0	E	Ff	Y	Ex	C	C	122.0	36.4	57.4	60.9	59.7	215 8	78.2		58 3	63.2
Firedome S-25, Fireflite S-26	1444.0	1319.0	E	Ff	Y	Ex	C	C	126.0	34.6	57.4	61.0	59.7	218 0	78.2		58 6	63.2
Dodge Coronet D-66, D-72	1444.0	1173.0	E	Ff	Y	Ex	C	C	122.0	33.5	56.7	60.9	59.7	212.2	77.9	156.8	58.2	63.2
Royal D-67-1, Custom Royal D-67-2	1444.0	1173.0	E	Ff	Y	Ex	C	C	122.0	33.5	56.7	60.9	59.7	212.2	77.9	156 8	58.4	63.2
Imperial Crown, La Baron	1622.0	1319.0	E	Ff	Y	Ex	C	C	129.0	35.8	59.2	61.9	62.4	224.0	81.2	159 0	58 3	67.5
Plymouth Plaza, Savoy, Belv. P-30	1444.0	1173.0	E	Ff	Y	Ex	C	C	118.0	32.2	54.4	60.9	59.6	204.6	78.2	156 8	58 1	63.2
Plaza, Savoy, Belvedere P-31	1444.0	1173.0	E	Ff	Y	Ex	C	C	118.0	32.2	54.4	60.9	59.6	204.6	78.2	156 8	58.2	63.2
Fury P-31	1436.0	1205.0	E	Ff	Y	Ex	C	C	118.0	32.8	55.3	60.9	59.6	206.1	79.4	167.4	35.3	63.2
FORD MOTOR CO.																		
Continental 60A	986.0	934.0	L	Ff	Y	Ex	C	C	126.0	35.3	57.2	58.5	60.0	218.4	77.5	166 8	57.1	58.8
Ford Custom 73A, Cust. 300, 73B	1053.6	976.0	E	Rf	Y	In	C	C	116.0	35.0	50.6	59.0	56.4	201.7	77.0	149.0	58.9	60.1
Fairlane, Fairlane 500	979.1	1078.3	E	Rf	Y	In	C	C	118.0	35.0	54.7	59.0	56.4	207.7	77.0	150.6	57.9	60.1
Thunderbird 40B	1027.2	533.6	E	Rf	Y	In	C	C	102.0	28.3	51.1	56.0	56.0	181.4	72.8	148.9	49 6	56.6
Lincoln Capri 58A, Premiere 58B	1123.4	1217.8	E	Ff	Y	Ex	C	C	126.0	35.8	62.9	58.5	60.0	224.6	80.3	155.2	61.2	61.7
Mercury Monterey 58A, Montclair 58B	1169.5	1504.1	E	Rf	Y	In	C	C	122.0	31.8	57.4	59.4	59.0	211.1	79.1	148.5	58 2	62.6
Turnpike 75A	1312.0	715.2	E	Rf	Y	In	C	C	122.0	31.8	57.4	59.4	59.0	211.1	79.1	148.5	57.9	62.6
GENERAL MOTORS CORP.																		
Buick Special 40	1356.9	1000.4	L	Ff	Y	Ex	C	3C	122.0	34.5	52.0	59.5	59.0	208.5	74.8	147.6	60 1	60.9
Century 60	1356.9	1000.4	L	Ff	Y	Ex	C	3C	122.0	34.5	52.0	59.5	59.0	208.5	74.8	147.6	60 4	60.9
Super 50, Roadmaster 70	1412.1	1120.5	L	Ff	Y	Ex	C	C	127.5	34.7	53.1	59.5	61.0	215.3	77.6	150.4	61 0	62.4
Cadillac 62	1412.1	1120.5	L	Ff	Y	Ex	C	C	129.5	34.7	51.7	61.0	61.0	215.9	80.0	153.5[6]	61 0	NA
60	1412.1	1120.5	L	Ff	Y	Ex	C	C	133.0	34.7	56.7	61.0	61.0	224.4	80.0	153.4	61.0	NA
75	1412.1	498.8	L	Ff	Y	Ex	C	C	149.8	34.7	51.7	61.0	61.0	236.2	80.0	153.5	63.7	NA
Chevrolet One-Fifty, Two-Ten, Bel Air	1147.9	1127.2	L	Ff	Y	Ex	C	C	115.0	32.5	52.5	58.0	58.8	200.0	73.9	140.1	61.5	59.2
Corvette 2934	906.0	408.0	L	Rf	N	In	C	F	102.0	24.7	41.4	57.0	59.0	168.0	70.5	NA	52.0	53.6
Oldsmobile 88, Super 88	1357.0	1000.0	L	Ff	Y	Ex	C	3C	122.0	33.9	51.9	59.0	58.0	208.2	76 4	147.6	59.8	56.0
Ninety-Eight	1357.0	1000.0	L	Ff	Y	Ex	C	3C	126.0	33.9	56.4	59.0	58.0	216.7	76.4	147.6	59.8	56.0
Pontiac Chieftain 5/-27	1087.5	1057.2	L	Ff	Y	Ex	C	C	122.0	35.5	49.4	59.0	59.4	205.8	75.2	143.2	62.0	59.4
Super Chief 57-27	1087.5	1057.2	L	Ff	Y	Ex	C	C	122.0	35.5	49.4	59.9	59.4	205.8	75.2	143.2	62.1	59.4
Star Chief 57-28	1087.5	1057.2	L	Ff	Y	Ex	C	C	124.0	35.5	54.4	59.0	59.4	213.8	75.2	143.2	62.1	59.4
STUDEBAKER-PACKARD CORP.																		
Packard Clipper 57L	1105.0	1172.8	E	Ff	N	Ex	C	C	120.5	38.0	53.3	56.7	55.7	211.8	77.4	135.4	61.7	52.1
Studebaker Champion 57G	1105.0	1172.8	E	Ff	N	Ex	C	C	116.5	35.6	50.3	57.2	56.2	202.4	75.8	135.4	61.0	50.1
Commander 57B	1105.0	1172.8	E	Ff	N	Ex	C	C	116.5	35.6	50.3	56.7	55.7	202.4	71.3	135.4	62.0	50.1
President 57H	1105.0	1172.8	E	Ff	N	Ex	C	C	116.5	36.4	47.9	56.7	55.7	200.8	71.3	135.4	62.0	50.1
Classic 57H	1105.0	1172.8	E	Ff	N	Ex	C	C	120.5	36.4	47.9	56.7	55.7	204.8	71.3	135.4	62 0	50.1
Golden Hawk 57H	858.0	910.0	E	Ff	N	Ex	C	C	120.5	34.9	48.6	56.7	55.7	203.9	70.4	151.9	58.1	51.8

ABBREVIATIONS

1—63.1 with outside rear tire mount.
2—219.3 with outside rear tire mount.
3—58.9 with outside rear tire mount.
4—198.9 with outside rear tire mount.
5—59.8 with 6.70/15 tires.
6—Sedan De Ville, 153.4.
C—One piece curved.
3C—Three piece curved.
E—Enamel.
Ex—External.
F—One piece flat.
Ff—Front, full.
In—Internal.
L—Lacquer.
N—No.
NA—Not available.
Rf—Rear, full.
Y—Yes.

For Directory of Car Manufacturers listed above, see Table of Contents

HEIGHT DIMENSIONS



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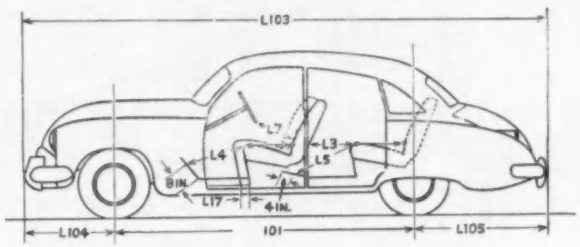

1957 PASSENGER CAR BODY DIMENSIONS

All dimensions apply to 5 or 6 passenger, 4 door sedan or equivalent model.

PASSENGER CAR MAKE AND MODEL	HEIGHT DIMENSIONS									WIDTH DIMENSIONS				LENGTH DIMENSIONS				
	Interior					Exterior				Interior				Interior				
	H1	H2	H3	H8	H13	H106	H107	HC	HD	W3	W4	W5	W6	L3	L4	L5	L7	L17
	Front Headroom	Rear Headroom	Front Seat Height to Floor	Rear Seat Height to Floor	Steering Wheel Clearance to Seat Cushion	Angle of Approach—Deg	Angle of Departure—Deg	Ramp Breakover Angle—Deg	Minimum Road Clearance—In	Front Seat Shoulder Room	Rear Seat Shoulder Room	Front Seat Hip Room	Rear Seat Hip Room	Back of Front Seat to Rear Seat Back	Leg Room—Front	Leg Room—Rear	Steering Wheel Clearance	Adjustment of Front Seat
AMERICAN MOTORS CORP.																		
Hudson Hornet 3578D	36.4	35 3	12.3	13.8	6.4	25.0	15.0[1]	13.0	6.2 M	61.5	61.3	65.0	64.5	31.8	42.5	40.1	14.3	5.0
Metropolitan 562	35.5	AB	10.0	AB	6.8	30.6	20.5	20 0	6.0 E	45.3	AB	49 8	AB	AB	43.3	AB	14.6	4.0
Nash Ambassador 5780	36.4	35.3	12.3	13.8	6.4	25.0	15.0[1]	13.0	6.2 M	61.5	61.3	65.0	64.5	31.8	42.5	40.1	14.3	5.0
Rambler 5710	36.0	35.0	11.5	14.5	6.0	20.0[2]	13.0[3]	19.0[5]	6.3 FCM[6]	57.7	57.6	59.8	60.1	30.8	43.0	42.0	11.6	6.0
5720	36.0	35.0	11.5	14.5	6.0	21.0	14.0[4]	20.0	6.7 FCM	57.7	57.6	59.8	60.1	30.8	43.0	42.0	11.6	6.0
CHRYSLER CORP.																		
Chrysler Windsor C-75-1, Saratoga C-75-2	34.8	34.6	11.0	12.1	5.5	18.9	12.4	9.8	5.4 FSM	60.5	60.4	63.0	62.7	31.3	45.5	43.0	14.9	5.0
New Yorker C-76	34.8	34.6	11.0	12.1	5.5	20.3	12.6	10.2	5.6 FSM	60.5	60.4	63.0	62.7	31.3	45.5	43.0	14.9	5.0
C-300, C-76-300	34.1	34.0	10.5	9.6	6.0			10.2	5.6 FSM	61.0	60.5	63.0	56.0	27.3	45 5	38.0	15.1	5.0
De Soto Firesweep S-27	34.8	34.6	11.0	12.1	5.5	18.9	12.9	10.2	5.4 FSM	60.5	60.4	63 0	62.7	31.3	45.5	43.0	14.9	5.0
Firedome S-25	34.8	34.6	11.0	12.1	5.5	17.7	13.2	9.8	5.4 FSM	60.5	60.4	63.0	62.7	31.3	45.5	43.0	14.9	5.0
Fireflite S-26	34.8	34.6	11.0	12.1	5.5	17.7	13.3	9.8	5.4 FSM	60.5	60.4	63.0	62.7	31.3	45.5	43.0	14.9	5.0
Dodge Coronet D-72	34.8	34.2	11.0	12.2	5.5	21.6	9.7	10.0	5.3 FSM	60.5	60.4	63.0	62.7	31.3	45.5	42.5	14.9	5.0
Coronet D-66	34.8	34.2	11.0	12.2	5.5	21.5	9.6	10.0	5.3 FSM	60.5	60.4	63.0	62.7	31.3	45.5	42.5	14.9	5.0
Royal D-67-1, Custom Royal D-67-2	34.8	34.2	11.0	12.2	5.5	23.4	9.9	10.2	5.4 FSM	60.5	60.4	63.0	62.7	31.3	45.5	42.5	14.9	5.0
Imperial IM1-1, Crown IM1-2, LeBaron IM1-4	34.5	34.2	11.0	12.5	5.3	15.1	11.5	9.8	5.5 FSM	63.6	62.4	63.5	63.2	34.0	46.2	45.0	15.7	5.0
Plymouth Plaza, Savoy, Belvedere P-30	35.3	34.2	11.0	12.0	5.5	23.7	11.6	10.0	5.2 FSM	60.5	60.4	63.0	62.7	29.3	45.9	41.5	14.9	5.0
Plaza, Savoy, Belvedere P-31	35.3	34.2	11.0	12.0	5.5	24.0	11.6	10.0	5.2 FSM	60.5	60 4	63.0	62.7	29.3	45.9	41.5	14.9	5.0
Fury P-31	34.1	34.0	10.5	9.7	6.1	23.5	11.4	9.5	4.9 FSM	61.0	60.5	63.0	56.0	26.1	45.7	36.5	15.1	5.0
FORD MOTOR CO.																		
Continental 60A	35.1	34.6	12.8	13.3	5.5	19.1	11.5	10.8	5.9 FC	55.8	53.6	59.6	56.6	26.6	42.5	39.1	15.0	4.3
Ford Custom 73A, Custom 300-73B	34.9	33.6	10.7	14.4	5.3	22.5	12.2	12.9	6.0	57.6	57.0	60.3	60.3	29.3	44.3	41.8	13.6	5.0
Fairlane 57B, 58A; Fairlane 500-57A, 58B	33.9	33.6	10.7	14.0	5.4	22.5	12.8	12.9	6.0	57.3	57.0	60.0	60.1	29.0	43.2	40.7	12.5	4.0
Thunderbird 40B	33.1	N	7.0	N	5.6[7]	22.3	13.9	11.8	5.3 F	53.3	N	58.8	N	N	44.9	N	14.4[7]	4.0
Lincoln Capri 58A, Premiere 58B	35.4	34.1	12.1	12.2	5.0	19.0	10.9	11.7	6.7	59.4	58.4	61.7	63.8	32.3	44.8	42.5	14.7	5.0
Mercury Monterey 58A, Montclair 58B	33.9	33.5	10.6	14.5	5.5	21.8	11.0	12.2	5.9 RB	60.2	60.2	61.3	62.9	31.5	44.2	41.4	14.4	5.0
Turnpike 75A	33.7	32.8	10.6	14.5	5.5	21.8	11.0	12.2	5.9 RB	60.4	60.3	61.3	62.9	31.5	44.2	41.4	14.4	5.0
GENERAL MOTORS CORP.																		
Buick Special 40	34.8	33.3	11.5	12.5	5.0	20.3	13.9	5.8	6.3	56.9	56.0	62.5	62.2	31.7	43.4	42.4	14.0	5.5
Century 60	35.2	33.8	11.4	12.4	5.0	20.0	14.3	6.0	6.6	56.9	56.0	62.5	62.2	31.7	43.3	42.3	14.0	5.5
Super 50	35.8	35.0	11.6	11.0	4.8	20.2	13.6	6.0	6.5	59.0	57.1	65.5	65.0	35.5	44.0	45.0	14.1	5.5
Roadmaster 70	34.6	34.3	12.0	11.6	4.4	20.5	14.8	6.3	6.7	59.0	57.1	65.3	64.8	35.6	43.6	45.0	13.6	5.5
Cadillac 62	35.0[8]	34.9	13.5	12.7	4.8	23.1	14.1	12.2	6.2 M	59.0	57.0	65.2	65.0	34.2	45.0	45.2	15 0	NA
60	33.9	34.7	13.9	12.7	4.4	23.1	12.8	11.9	6.2 M	59.0	57.0	65.0	65.0	34.2	45.2	45.3	15 0	NA
75	36.6	35.3	12.8	13.6	5.5	25.5	15.4	12.0	7.2 M	59.0	58.8	65.5	57.8	26.8	43.5		14.1	NA
Chevrolet One-Fifty, Two-Ten, Bel Air	36 0	35.6	13.1	12.2	6.1	20.9	12.0	11.9	5.9 E	56.9	56.4	62.1	63.0	28.6	44.7	39.8	14 8	4.4
Corvette 2934	34.3	N	8.9	N	4.8	28.0	18.9	14.9	5.8 BS	51.3	N	50 5	N	N	44.2	N	13.5	4.4
Oldsmobile 88	35.3	33.8	11.6	11.7	4.9	21.5	13.7	12.3	6.0 FSM	56.9	56.0	62.5	62.2	31.1	44.4	41.8	13.9	5.3
Super 88	34.9	33.8	11.2	11.5	4.5	21.5	13.7	12.3	6.0 FSM	56.9	56 0	62.5	62 2	31.1	44.2	41.6	13.9	5 3
Ninety-Eight	34.8	33.4	11.3	11.6	4.5	21.5	12.4	11.8	6.0 FSM	56.9	56.0	62.3	62.0	31.0	44.2	41.8	13.9	5.3
Pontiac Chieftain 57-27	35 8	35 8	13.6	12.1	5.1	17.5	12.6	11.5	6.1 FSM	56.7	56.4	61.9	63.1	31.8	43.4	42.0	14.1	4.4
Super Chief 57-27	35.8	35.8	13 5	12.1	5.1	17.7	12.7	11.7	6.2 FSM	56.7	56.4	61.9	63.1	31.8	43.4	41.8	14.1	4.4
Star Chief 57-28	35.8	35.8	13.5	12.1	5.1	17.7	11.5	11.4	6.2 FSM	56.7	56.4	61.9	63.1	31.8	43.4	41.8	14.1	4.4
STUDEBAKER-PACKARD CORP.																		
Packard Clipper 57L	36 0	35.0	13.0	12.0	6.0	20.0	17.5	14.5	7.3 ERS	55.3	54.4	59.5	59.0	32.0	44.0	41.0	13.5	5.5
Studebaker Champion 57G	36 5	35 5	13.5	12.0	5.1	18.5	18.0	14.5	6.5 ERS	55.5	54.5	59.5	59.0	27.8	42.5	39 0	15 5	5.5
Commander 57E, President 57H	36 5	35 5	13.5	12.0	5.4	20 0	17.5	14.5	7.3 ERS	55.5	54.5	59.5	59.0	27.8	42 5	39.0	15.5	5.5
Classic 57H	36 5	35 5	13 5	12.0	5.4	20.0	17.5	14 5	7.3 ERS	55.5	54 5	59 5	59 0	31.8	42.5	41.0	15.5	5.5
Golden Hawk 57H	35.6	34.0	10.8	12.5	4.3	20.0	17.0	14.5	6.5 FPC	55.0	53.0	59.5	58.0	26.6	43.8	36.0	13.8	5.5

ABBREVIATIONS

1—12.0 with outside rear tire mount.
2—21.0 with 6.70/15 tires.
3—12.0 with outside rear tire mount; 14.0 and 13.0 with outside rear tire mount when equipped with 6.70/15 tires.
4—13.0 with outside rear tire mount.
5—20.0 with 6.70/15 tires.
6—6.7 with 6.70/15 tires.
7—With wheel in neutral position.
8—Sedan De Ville, 34.9.
AB—Auxiliary bench type seat.
BS—Body sill.
E—Exhaust pipe.
ERS—Engine rear support cross member.
F—Frame.
FC—Frame center member.
FCM—Front cross member.
FPC—Body front pillar cross member.
FSM—Frame side member.
M—Muffler.
N—None.
NA—Not available.
RB—Rear bumper.

For Directory of Car Manufacturers listed above, see Table of Contents

GENERAL ENGINE DATA, PISTONS

PASSENGER CAR MAKE AND MODEL	ENGINE															PISTONS								
					Compression Ratio (to 1)		Mounting Points						Shipping Weight 5-6 Pass., 4 Dr. Sed.	Weight per Cu. In. #	Weight per Hp. #	HP per Cu. In.			Clearance			Ring Groove Depth			
	Type	Valve Arrangement	Number of Cylinders, Bore and Stroke	Piston Disp.—Cu. In.	Standard	Optional	Front	Rear	Taxable HP	Adv. Max. BHP at Engine RPM	Max. Torque (lb. ft. at RPM)	Recommended Idle Speed—RPM					Description and Finish	Weight—Oz. (Piston Only)	Top Land	Top of Skirt	Bottom of Skirt	No. 1 Ring	No. 2 Ring	No. 3 Ring	No. 4 Ring
AMERICAN MOTORS CORP.																								
Hudson Hornet 35780	V	IH	8-4x3¼	327.0	9.00	N	2	2	51.20	255-4700	345-2600	550[1]	3631	12.63	16.20	.780	Sa,Tp,Au	23.45	.0220	.0013	.0012	.1870	.1870	.1890	N
Metropolitan 561, 562	IL	IH	4-2¾x3½	90.9	7.20	N	2	2	13.22	52-4500	77-2500	500	1825	25.58	44.71	.572	Sp,An	10.25	.0150	.0026	.0008	.1230	.1230	.1230	.1325
Nash Ambassador 5780	V	IH	8-4x3¼	327.0	9.00	N	2	2	51.20	255-4700	345-2600	550[1]	3639	12.66	16.23	.780	Ss,Tp,Au	23.45	.0220	.0013	.0012	.1870	.1870	.1890	N
Rambler 5710	IL	IH	6-3½x4½	195.6	8.25	N	2	2	23.44	125-4200[2]	175-1600[3]	550[4]	2911	17.44	27.29	.639	So,Tp,Co	14.70	.0185	.0009	.0009	.1690	.1690	.1730	N
5729	V	IH	8-3½x3¼	250.0	8.00	N	2	2	39.20	190-4900	240-2500	550[5]	3223	14.89	19.59	.760	Ss,Tp,Au	18.00	.0220	.0013	.0012	.1870	.1870	.1890	N
CHRYSLER CORP.																								
Chrysler Windsor C-75-1	V	IH	8-3⅛x3⅝	354.0	9.25	N	2	1	49.70	255-4600[6]	365-2400[7]	475	3995	12.70	15.77	.805	Sa,St,E,Tp	22.80	.0320	.....	.0010	.2100	.2100	.2000	N
Saratoga C-75-2	V	IH	8-3⅛x3⅝	354.0	9.25	N	2	1	49.70	295-4600	390-2800	475	4165	13.18	15.81	.833	Sa,St,E,Tp	22.80	.0320	.....	.0010	.2100	.2100	.2000	N
New Yorker C-76	V	IH	8-4x3⅜	392.0	9.25	N	2	1	51.20	325-4800	430-2800	475	4315	12.28	14.82	.829	Sa,St,E,Tp	24.70	.0320	.....	.0010	.2100	.2100	.2000	N
C-300, C-76-300	V	IH	8-4x3⅜	392.0	9.25	10.00	2	1	51.20	375-5200	420-4000	650	4235	12.08	12.63	.957	Sa,St,E,Tp	24.70	.0320	.....	.0010	.2100	.2100	.2000	N
De Soto Firesweep S-27	V	IH	8-3⅛x3⅜	325.0	8.50	N	2	1	42.20	245-4400[8]	320-2400[9]	475	3675	12.85	17.04	.754	Sa,St,E,Tp	18.60	.0320	.0010	.....	.1900	.1900	.....	N
Firedome S-25	V	IH	8-3⅛x3⅜	341.0	9.25	N	2	1	45.70	270-4600	356-2400	475	3955	13.06	16.50	.792	Sb,Hs,E,Tp	20.70	.0320	.0010	.....	.1900	.1900	.....	N
Fireflite S-26	V	IH	8-3⅛x3⅜	341.0	9.25	N	2	1	45.70	295-4800	375-2800	475	4025	13.27	15.34	.865	Sb,Hs,E,Tp	20.70	.0320	.0010	.....	.1900	.1900	.....	N
Dodge Coronet D-72	IL	L	6-3¼x4⅝	230.0	8.00	N	2	1	25.40	138-4000	208-1600	475	3470	17.26	28.77	.600	Us,E,Tp	15.80	.0300	.....	.0007	.1700	.1700	.1700	.1700
Coronet D-66, Royal D-67-1, Sub. D-70, D-71	V	IH	8-3⅛x3⅜	325.0	8.50	N	2	1	43.30	245-4400[10]	320-2400[10]	475	3620	12.68	16.82	.754	Sa,St,E,Tp	18.60	.0320	.0010	.....	.1900	.1900	.1900	N
Custom Royal D-67-2	V	IH	8-3⅛x3⅜	325.0	8.50	N	2	1	43.30	280-4400[10]	335-2800[10]	475	3690	12.89	16.12	.800	Sa,St,E,Tp	18.60	.0320	.0010	.....	.1900	.1900	.1900	N
Imperial IM1-1, Crown, LeBaron	V	IH	8-4x3⅜	392.0	9.25	N	2	1	51.20	325-4800	430-2800	475	4640	13.11	15.82	.829	Sa,St,E,Tp	24.70	.0320	.....	.0010	.2100	.2100	.2000	N
Plymouth Plaza, Savoy, Belvedere P-30	IL	L	6-3¼x4⅝	230.0	8.00	N	2	1	25.40	132-3600	205-1600	475	3260	16.35	28.48	.574	Us,E,Tp	15.80	.0300	.....	.....	.1700	.1700	.1700	.1700
Plaza P-31-1	V	IH	8-3⅛x3⅛	277.0	8.00	N	2	1	45.00	197-4400[11]	270-2400[11]	475	3405	14.10	19.82	.711	Sb,Hs,E,Tp	19.20	.0320	.0010	.....	.2100	.2100	.2100	N
Savoy P-31-2, Belvedere P-31-3	V	IH	8-3⅛x3⅛	301.0	8.50	N	2	1	48.90	215-4400[12]	285-2800[13]	475	3415	13.01	18.21	.714	Sb,Hs,E,Tp	20.90	.0320	.0010	.....	.2100	.2100	.2000	N
Fury P-31	V	IH	8-3⅛x3⅞	318.0	9.25	N	2	1	48.90	290-5400	325-4000	475	3595	12.88	12.60	.912	Sb,Hs,E,Tp	21.00	.0320	.0010	.....	.2100	.2100	.2000	N
FORD MOTOR CORP.																								
Continental 60A	V	IH	8-4x3⅜	368.0	10.00	N	2	1	51.20	300-4800	415-3000	500	4800	14.40	17.67	.815	Au,Ss,Tp	23.42	.0141	.0013	.0012	.2121	.2121	.2171	N
Ford Cust., Cust. 300, Fairlane, Fairlane 500	IL	IH	6-3⅝x3⅜	223.0	8.60	N	2	1	31.54	144-4200	212-2400	500	3197	16.58	25.67	.646	Au,So,Cg,Fh,Tp	19.25	.0237	.0017	.0009	.2051	.2051	.2051	N
Custom, Custom 300	V	IH	8-3⅝x3⅜	272.0	8.60	N	2	1	42.05	190-4500[14]	270-2700[14]	500	3319	14.04	20.10	.699	Au,So,Cg,Fh,Tp	18.70	.0237	.0017	.0009	.2051	.2051	.2051	N
Fairlane, Fairlane 500	V	IH	8-3⅝x3⅜	292.0	9.10	N	2	1	45.00	206-4500[15]	297-2700[15]	500	3437	13.48	19.11	.705	Au,So,Cg,Fh,Tp	19.60	.0257	.0017	.0009	.2116	.2116	.2086	N
Thunderbird 40A, 40B	V	IH	8-3⅝x3⅜	292.0	9.10	N	2	1	45.00	212-4500[16]	297-2700[16]	500	3134	12.45	17.14	.726	Au,So,Cg,Fh,Tp	19.60	.0257	.0017	.0009	.2116	.2116	.2086	N
Lincoln Capri, Premiere	V	IH	8-4x3⅜	368.0	10.00	N	2	1	51.20	300-4800	415-3000	500	4800	14.40	17.67	.815	Au,Ss,Tp	23.42	.0141	.0013	.0012	.2121	.2121	.2171	N
Mercury Monterey, Montclair	V	IH	8-3⅞x3⅞	312.0	9.70	N	2	1	46.21	255-4600	340-3000	500	3915	14.15	17.31	.817	Au,So,Cg,Fh,Tp	20.60	.0257	.0017	.0009	.2026	.2026	.1936	N
Turnpike	V	IH	8-4x3⅜	368.0	9.70	N	2	1	51.20	290-4600	405-2800	500	4015	12.27	15.57	.788	Au,Ss,Fh,Tp	23.42	.0141	.0013	.0012	.2121	.2121	.2171	N
GENERAL MOTORS CORP.																								
Buick Special 40	V	IH	8-4⅛x3⅜	364.0	8.00	9.50[17]	2	1	54.45	250-4400	380-2400	485	4001	12.37	18.00	.687	Cg,Ts,Ds	22.16	.0040	.0011	.0026	.2150	.2215	.2265	N
Century 60, Super 50, Roadmaster 70	V	IH	8-4⅛x3⅜	364.0	10.00	N	2	1	54.45	300-4800	400-3200	485	4156	12.79	15.52	.824	Cg,Ts,Ds	22.16	.0040	.0011	.0026	.2150	.2215	.2265	N
Cadillac 60, 62, 75	V	IH	8-4x3⅝	365.0	10.00	N	2	1	51.20	300-4800[18]	400-2800[19]	420[20]	4595	13.96	16.98	.822	T,Cg,Sc	22.72	.0295	.0015	N	.2080	.2080	.2080	N
Chevrolet One-Fifty, Two-Ten, Bel Air	IL	IH	6-3⅞x3⅛	235.5	8.00	N	2	2	30.40	140-4200	210-2400	475	3281	16.07	27.01	.594	St,Cg,Tp,Ce,Fh	18.40	.0355	.0008	.....	.2015	.2015	.2015	N
One-Fifty, Two-Ten, Bel Air	V	IH	8-3⅛x3	265.0	8.00	N	2	2	45.00	162-4400	257-2400	475	3272	14.23	23.28	.611	St,Fh,Se,Cg,Tc,Ce	21.44	.0390	.0008	.....	.2151	.2151	.2076	N
One-Fifty, Two-Ten, Bel Air	V	IH	8-3⅞x3	283.0	8.50	9.50[21]	2	2	48.00	185-4600[22]	275-2400[22]	475	3272	13.33	20.39	.654	St,Fh,Se,Cg,Tc,Ce	20.96	.0390	.0008	.....	.2186	.2188	.2126	N
Corvette 2934	V	IH	8-3⅞x3	283.0	9.50	10.50[24]	2	2	48.00	220-4800[23]	300-3000[23]	475[25]	2730	11.41	14.68	.777	St	21.12	.0390	.0008	.....	.2186	.2188	.2126	N
Oldsmobile 88, Super 88, Ninety-Eight	V	IH	8-4x3⅛	370.7	9.50	N	1	2	51.00	277-4400	400-2800	450[26]	4000	12.14	16.25	.747	Au,Cg,Tp,Se	25.22	.0310	.0015	.0010	.2095	.2095	.1995	N
Pontiac Chieftain, Super Chief, Star Chief	V	IH	8-3⅛x3⅞	347.0	8.50	10.00[17]	1	2	49.60	227-4600[27]	333-2300[27]	460[28]	3560	11.70	17.89	.654	Cg,Ss,Sb,Tp	23.40	.0285	.0012	.0009	.2110	.2010	.1840	N
STUDEBAKER-PACKARD CORP.																								
Packard Clipper 57L	V	IH	8-3⅞x3⅝	289.0	7.50	7.00	2	1[29]	40.60	275-4800	333-3200	550	3570	14.08	14.80	.952	Cg,Tp,Ch	16.22	.0195	SFF	.....	.1938	.1938	.1938	N
Studebaker Champion 57G	IL	L	6-3x4⅝	185.6	7.80	7.10	2	1[29]	21.60	101-4000	152-1800	550	2785	17.70	32.52	.544	Cg,Tp,T	9.35	.0195	SFF	.....	.1635	.1485	.1685	N
Commander 57S	V	IH	8-3⅞x3¼	259.2	8.30	7.80	2	1[29]	40.60	180-4500[30]	260-2800[31]	550	3105	13.91	20.03	.694	Cg,Tp	16.21	.0195	SFF	.....	.1938	.1938	.1938	N
President, Classic 57H	V	IH	8-3⅞x3⅝	289.0	8.30	7.50[32]	2	1[29]	40.60	210-4500[33]	300-2800[34]	550	3205	12.82	17.64	.727	Cg,Tp,Ch	16.22	.0195	SFF	.....	.1938	.1938	.1938	N
Golden Hawk 57H	V	IH	8-3⅞x3⅝	289.0	7.50	7.00	2	1[29]	40.60	275-4800	333-3200	550	3400	13.49	14.18	.952	Cg,Tp,Ch	16.22	.0195	SFF	.....	.1938	.1938	.1938	N

ABBREVIATIONS

#—Shipping weight plus 500 lb. for passengers, oil, water and gasoline.

1—425 with auto. trans.; 475 with auto. trans. and operating air cond.

2—135-4500 with twin throat carburetor.

3—180-1800 with twin throat carburetor.

4—475 with auto. trans.; 500 with auto. trans. and operating air cond.

5—425 with auto. trans.; 450 with auto. trans. and operating air cond.

6—295-4600 with power pack.

7—390-2800 with power pack.

8—260-4400 with power pack.

9—335-2800 with power pack.

10—Optional D-500 engine available with 285-4800 horsepower and 345-2800 torque or 310-4800 horsepower and 350-3200 torque with spec. kit.

11—301 cu. in. engine optional in Plaza P-31-1 but, standard in P-31-1 Suburban.

12—235-4400 with power pack.

13—305-2800 with power pack.

14—Optional 312 cu. in. engine available with 245-4500 horsepower and 332-3200 torque.

15—212-4500 with auto. trans. (Footnote 16 also applies.)

16—Optional 312 cu. in. engine available with 245-4500 horsepower and 332-3200 torque or 270-4800 horsepower and 336-3400 torque with two four barrel carburetors.

17—With auto. trans.

18—Eldorado, 325-4800.

19—Eldorado, 400-3300.

20—In drive range.

21—With one or two four barrel carburetors or fuel injection; 10.50 with fuel injection and competition camshaft.

22—220-4800 horsepower and 300-3000 torque with four barrel carburetor. (Footnote 24 also applies.)

23—245-5000 horsepower and 300-3800 torque with two four barrel carburetors; 250-5000 and 305-3800 with fuel injection; 270-6000 and 285-4200 with four barrel carburetor and competition camshaft; 283-6200 and 290-4400 with fuel injection and competition camshaft.

24—With fuel injection and competition camshaft.

25—425 with auto. trans. (in drive).

26—460 with auto. trans.

27—252-4600 horsepower and 354-2400 with auto. trans.; 270-4800 and 359-2800 with four barrel carburetor.

28—500 with auto. trans.

29—Two with auto. trans.

30—195-4500 with four barrel carburetor.

31—265-3000 with four barrel carburetor.

32—Also 7.10.

33—225-4500 with four barrel carburetor.

34—305-3000 with four barrel carburetor.

An—Anodized. Au—Autothermic.

Ce—Controlled expansion.

Cg—Cam ground. Ch—Concave head.

Co—Conformatic.

Ds—Divorced skirt.

E—Elliptically turned.

Fh—Flat head. Hs—Horizontal slot.

IH—In head.

IL—In line.

L—"L" head, valves at side.

N—No or none.

Sb—Steel band.

Sc—Stannate coated.

SFF—Selective feeler fit.

So—Solid skirt.

Sp—Split skirt.

Ss—Slipper type skirt.

St—Steel strut.

T—"T" slot.

Tp—Tin plated.

Ts—Transverse slot.

Us—"U" slot.

V—"V" type engine.

PISTON RINGS, PISTON PINS, AND CONNECTING RODS

PASSENGER CAR MAKE AND MODEL	Bore	PISTON RINGS															PISTON PIN									CONNECTING RODS					
		Type—Oil or Compression				No. Rings Above Piston Pin	Compression					Oil					Location of Expanders				Type			Clearance		Direction Offset in Piston				Bearing			
		No. 1	No. 2	No. 3	No. 4		Material	Coating	Width	Gap	Maximum Wall Thickness	Material	Coating	Width	Gap	Maximum Wall Thickness		Material	Length	Diameter	Locked in—	Bushing Location	Bushing Material	In Piston	In Rod		Material	Weight (oz.)	Length (center to center)	Material	Effective Length	Clearance	End Play
AMERICAN MOTORS CORP.																															
Hudson 8-35780	4	C	C	O	N	3	Al	Ch[1]	.0778	.015	.175	SS	Ch	.0245	.035	.156	OR	1016	3.1870	.9307	R	N	.....	PPF	PF	MT	1145	27.60	6.3750	Bsb	.8670	.0018	.008
Metropolitan 4-561, 562	2⅞	C	C	C	O	4	Cl	OG	.0776	.011	.118	Cl	OG	.1557	.011	.118	N	NAS	2.5730	.6870	R	N	.....	.0003	N	N	FS	24.80	6.5000	Bsb	1.0000	.0013	.010
Nash 8-5780	4	C	C	O	N	3	Al	Ch[1]	.0778	.015	.175	SS	Ch	.0245	.035	.156	OR	1016	3.1870	.9307	R	N	.....	PPF	PF	MT	1145	27.60	6.3750	Bsb	.8670	.0018	.008
Rambler 6-5710	3⅛	C	C	O	N	3	Al	Ch[2]	.0933[3]	.015	.151	SS	Ch	.0245	.035	.138	OR	1016	2.7500	.8597	R	N	.....	PPF	PF	MT	1145	23.00	6.6250	Bsb	.9600	.0013	.010
..... 8-5720	3½	C	C	O	N	3	Al	Ch[1]	.0777	.015	.175	SS	Ch	.0245	.035	.156	OR	1016	3.1870	.9307	R	N	.....	PPF	PF	MT	1145	27.60	6.3750	Bsb	.8670	.0018	.008
CHRYSLER CORP.																															
Chrysler 8-C-75	3⅛	C	C	O	N	3	PRI	T	.0780	.015	.200	PRI	N	.1860	.015	.150	OR	HMS	3.1500	.9840	F	R	BrS	.0003	.0003	Ri	HMFS	25.20	6.6200	Bsb	.8800	.0010	.010
..... 8-C-76	4	C	C	O	N	3	PRI	T	.0780	.019	.200	PRI	N	.1860	.015	.150	OR	HMS	3.1500	.9840	F	R	BrS	.0003	.0003	Ri	HMFS	25.60	6.9500	Bsb	.8400	.0010	.010
8-C-76-300	4	C	C	O	N	3	PRI	Ch[4]	.0780	.019	.200	PRI	N	.1860	.019	.160	OR	HMS	3.1500	.9840	F	R	BrS	.0003	.0003	Ri	HMFS	25.60	6.9500	Cls	.8400	.0010	.010
De Soto 8-S-27	3⅛	C	C	O	N	3	PRI	T	.0780	.015	.180	PRI	N	.1860	.015[5]	.140	OR	HMS	3.0700	.9220	F	R	BrS	.0003	.0003	Ri	HMFS	22.50	6.6200	Bsb	.7800	.0010	.013
..... 8-S-25, S-26	3⅛	C	C	O	N	3	PRI	T	.0780	.015	.190	PRI	N	.1860	.015	.150	OR	HMS	3.0700	.9220	F	R	BrS	.0003	.0003	Ri	HMFS	23.60	6.6200	Bsb	.8100	.0010	.013
Dodge 6-D-72	3¼	C	C	O	O	4	PRI	Ch[4]	.0930	.015	.160	PRI	N	.1550	.015	.150	N	HMS	2.7500	.8590	F	R	BrS	.0003	.0002	N	HMFS	27.90	7.8100	Bsb	.9300	.0010	.009
..... 8-D-66, D-67, D-70, D-71	3⅛	C	C	O	N	3	PRI	T	.0780	.015	.180	PRI	N	.1860	.015[5]	.140	OR	HMS	3.0700	.9220	F	R	BrS	.0003	.0003	Ri	HMFS	22.50	6.6200	Bsb	.7800	.0010	.013
Imperial 8-1M1	4	C	C	O	N	3	PRI	T	.0780	.019	.200	PRI	N	.1860	.019	.160	OR	HMS	3.1500	.9840	F	R	BrS	.0003	.0003	Ri	HMFS	25.60	6.9500	Bsb	.8400	.0010	.010
Plymouth 6-P-30	3¼	C	C	O	O	4	PRI	Ch[4]	.0930	.015	.160	PRI	N	.1550	.015	.150	N	HMS	2.7500	.8590	F	R	BrS	.0003	.0002	N	HMFS	27.90	7.8100	Bsb	.9300	.0010	.009
..... 8-P-31-1	3⅝	C	C	O	N	3	PRI	T	.0780	.015	.180	PRI	N	.1860	.015	.140	OR	HMS	3.0000	.9840	F	R	BrS	.0003	.0003	Ri	HMFS	25.30	6.1200	Bsb	.8100	.0015	.010
..... 8-P-31-2, P-31-3, P-31 Fury	3⅞	C	C	O	N	3	PRI	T	.0780	.015	.190	PRI	N	.1860	.015	.150	OR	HMS	3.0000	.9840	F	R	BrS	.0003	.0003	Ri	HMFS	24.00	6.1200	Bsb	.8100	.0010	.010
FORD MOTOR CO.																															
Continental 8-60A	4	C	C	O	N	3	Cl	Ch[6]	.0778[3]	.018	.187	St	Ch	.1879	.035	.171	OR	ASH	3.1690	.9122	F	R	Br	.0002	.0002	Ri	FS	28.36	7.0650	Cls	.7890	.0016	.010
Ford 6-57A, B58A, B73A, B	3⅝	C	C	O	N	3	ACI[7]	Ch[8]	.0933[9]	.015	.181	St	Ch	.1850	.035	.171	OR	ASH	3.0230	.9122	F	R	Br	.0002	.0002	Ri	FS	29.63	6.2600	Bsb	1.0040	.0013	.006
..... 8-73A, B	3⅝	C	C	O	N	3	ACI[7]	Ch[8]	.0933[9]	.015	.181	St	Ch	.1850	.035	.171	OR	ASH	3.0230	.9122	F	R	Br	.0002	.0002	Ri	FS	24.05	6.3220	Cls	.7260	.0014	.011
8-40A, B57A, B58A, B73A, B	3⅝	C	C	O	N	3	ACI[7]	Ch[8]	.0778	.015	.187	St	Ch	.1850	.035	.171	OR	ASH	3.0250	.9122	F	R	Br	.0002	.0002	Ri	FS	24.05	6.3220	Cls	.7260	.0014	.011
Lincoln 8-57A, B58A, B60A, B76B	4	C	C	O	N	3	Cl	Ch[6]	.0778[3]	.018	.187	St	Ch	.1879	.035	.171	OR	ASH	3.1690	.9122	F	R	Br	.0002	.0002	Ri	FS	28.36	7.0650	Cls	.7890	.0016	.010
Mercury 8-57A, B58A, B	3⅞	C	C	O	N	3	Cl	Ch[6]	.0777[10]	.017	.178	St	Ch	.1879	.....	.156	OR	ASH	3.0250	.9122	F	R	Br	.0002	.0002	Ri	FS	22.83	6.2520	Cls	.7260	.0016	.011
..... 8-75A	4	C	C	O	N	3	Cl	Ch[6]	.0777[3]	.018	.187	St	Ch	.1879	.....	.171	OR	ASH	3.1690	.9122	F	R	Br	.0002	.0002	Ri	FS	28.36	7.0650	Cls	.7890	.0016	.010
GENERAL MOTORS CORP.																															
Buick 8-40, 50, 60, 70	4⅛	C	C	O	N	3	Cl	Lub	.0775	.020	.206	St	N	.1830	.025	.135	OR	1118	3.5000	.9896	R	N	.....	.0004	.0011	N	1141	23.20	6.1000	Als	.7810	.0013	.009
Cadillac 8-60, 62, 75	4	C	C	O	N	3	Cl	Ch[2]	.0781	.018	.200	Cl	N	.1875	.018	.150	OR	1045	3.0930	1.0000	R	N	.....	.0001	PF	MT	1041	23.49	6.6250	Dur	.8175	.0013	.009
Chevrolet 6-1500, 2100, 2400	3⅞	C	C	O	N	3	ACI	WR	.0933	.012	.178	St	Ch	.1845	.035	.153	OR	CS	3.1830	.8663	R	N	.....	.0002	N	MT	DFS	28.03	6.8125	Bsb	1.0080	.0017	.008
..... 8-1500, 2100, 2400	3⅝	C	C	O	N	3	ACI	Ch[11]	.0778	.014	.187	St	Ch	.1845	.035	.168	OR	HAS	3.0000	.9272	R	N	.....	.0002	N	MT	DFS	18.88	5.7000	Bsb	.8170	.0017	.011
..... 8-1500, 2100, 2400	3⅞	C	C	O	N	3	ACI	Ch[11]	.0778	.015	.194	St	Ch	.1845	.035	.168	OR	HAS	3.0000	.9272	R	N	.....	.0002	N	MT	DFS	18.88	5.7000	Bsb	.8170	.0017	.011
..... 8-2934	3⅞	C	C	O	N	3	ACI	Ch[11]	.0778	.015	.194	St	Ch	.1845	.035	.168	OR	CS	3.0000	.9272	R	N	.....	.0002	N	MT	FS	19.02	5.7000	Als	.8170	.0017	.011
Oldsmobile 88, Super 88, 98	4	C	C	O	N	3	Cl	Ch[2]	.0778[3]	.018	.187	St	BO	.2258	.035	.175	OR	1117	3.1260	.9805	F	R	Br	.0001	.0004	Ri	1139	29.53	6.6250	Als	.8260	.0020	.007
Pontiac 8-57-27, 57-28	3⅛	C	C	O	N	3	Cl	Ch[2]	.0780	.015[12]	.182[13]	St	Ch	.1845	.035	.171	OR	1117	3.1260	.9805	F	R	LB	.0002	.0004	Ri	1139	29.34	6.6250	Dsb	.8800	.0019	.009
STUDEBAKER-PACKARD CORP.																															
Packard 8-57L	3⅞	C	C	O	N	3	Cl	Gr	.0781	.012	.178	Cl	Gr	.1875	.012	.141	OR	5120	3.0625	.8750	R	N	.....	.0002	N	N	1141	23.71	6.6250	Tsb	.0015	.8125	.011
Studebaker 6-57G	3	C	C	O	N	3	Cl	Fer	.0938[14]	.012	.150[15]	Cl	NB	.1563	.011	.135	OR	8620	2.6250	.7500	R	N	.....	.0002	N	N	1041	19.04	6.3750	Bsb	.8750	.0015	.007
..... 8-57B, 57H	3⅞	C	C	O	N	3	Cl	Gr	.0781	.012	.178	Cl	Gr	.1875	.012	.141	OR	5120	3.0625	.8750	R	N	.....	.0002	N	N	1141	23.71	6.6250	Bsb	.0015	.8125	.010

ABBREVIATIONS

1—Upper only; lower, ferrox.
2—Upper only; lower, lubrite.
3—Upper only; lower, .0930.
4—Upper only; lower, tin.
5—Muskegon ring, .012.
6—Upper only; lower, phosphate.
7—Upper only; lower, cast iron.
8—Upper only; lower, oxide.
9—Upper only; lower, .0940.
10—Upper only; lower, .0935.
11—Upper only; lower, wear resistant.
12—Upper only; lower, .014.
13—Upper only; lower, .197.
14—Upper only; lower, .1250.
15—Upper only; lower, .135.

ACI—Alloy cast iron.
Al—Alloy iron.
Als—Aluminum, steel backed.
ASH—Alloy steel, heat treated.
BO—Black oxide.
Br—Bronze.
BrS—Bronze on steel.
Bsb—Babbitt, steel backed.
C—Compression.
Ch—Chromium.
Cl—Cast iron.
Cls—Copper lead alloy, steel backed.
CS—Chrome steel.
DFS—Drop forged steel.
Dsb—Durex, steel backed.
Dur—Durex.
F—Floating.
Fer—Ferrox.
FS—Forged steel.
Gr—Granoseal.
HAS—High alloy steel.
HMFS—High manganese forging steel.
HMS—High manganese steel.
LB—Lead bronze.
Lub—Lubrite.
MT—Toward maximum thrust side.
N—No or none.
NAS—Nickel alloy steel.
NB—None or blued.
O—Oil.
OG—Oxidized or Granodized.
OR—Oil ring.
PF—Press fit.
PPF—Palm press fit.
PRI—Piston ring iron.
R—Connecting rod.
Ri—Right.
SS—Spring steel.
St—Steel.
T—Tin.
Tsb—Tri-metal, steel backed.
WR—Wear resistant.

For Directory of Car Manufacturers listed above, see Table of Contents

CRANKSHAFTS, CAMSHAFTS

PASSENGER CAR MAKE AND MODEL	CRANKSHAFT													CAMSHAFT								
						Main Bearing									Bearings		Type of Drive					
								Journal Diameter and Bearing Effective Length												Timing Chain		
	Material	Weight (lb.)	Vibration Dampener Type	End Thrust Taken Up by Bearing	Crankshaft End Play	Material	Clearance	No. 1	No. 2	No. 3	No. 4	No. 5	Connecting Rod Crankpin Journal Diameter	Material	Material	Number	Gear or Chain	Crankshaft Gear or Sprocket Material	Camshaft Gear or Sprocket Material	Make	No. of Links	Width	Pitch
AMERICAN MOTORS CORP.																						
Hudson 8-35780	DFS	62.80	RF	1	.0050	Bsb	.0019	2.4987x .9560	2.4987x .9500	2.4987x .9500	2.4987x .9500	2.4987x .9500	2.2487	SCIA	Bsb	5	Ch	1117	110	Mor	62	.8750	.375
Metropolitan 4-561, 562	FS	26.00	N	2	.0025	Bsb	.0013	2.0008x1.3750	2.0008x1.3750	2.0008x1.3750	None	None	1.6762	FS	Bsb	3	Ch	SCI	SCI	Ren	52	.9000	.375
Nash 8-5780	DFS	62.80	RF	1	.0050	Bsb	.0019	2.4987x .9560	2.4987x .9500	2.4987x .9500	2.4987x .9500	2.4987x .9500	2.2487	SCIA	Bsb	5	Ch	1117	110	Mor	62	.8750	.375
Rambler 6-5710	DFS	65.50	RF	1	.0050	Bsb	.0012	2.4795x1.1250	2.4795x1.1250	2.4795x1.1250	2.4795x1.1250	2.4795x1.5310	None	2.0952	SCIA	Bsb	4	Ch	1117	110	Mor	80	1.0000	.375
8-5720	DFS	62.80	RF	1	.0050	Bsb	.0019	2.4987x .9560	2.4987x .9500	2.4987x .9500	2.4987x .9500	None	2.2487	SCIA	Bsb	5	Ch	1117	110	Mor	62	.8750	.375
CHRYSLER CORP.																						
Chrysler 8-C-75	DFS	NA	RD	3	.0045	Bsb	.0010	2.5000x .7600	2.5000x .7600	2.5000x .7600	2.5000x .7600	2.5000x1.2500	2.2500	SCI	Bsb	5	Ch	HMS	CI	Mor	68	1.1200	.375
8-C-76	DFS	NA	RD	3	.0045	Bsb	.0010	2.6900x .7700	2.6900x .7700	2.6900x .8100	2.6900x .7700	2.6900x1.2000	2.3700	SCI	Bsb	5	Ch	HMS	CI	Mor	68	1.1200	.375
8-C-76-300	DFHS	NA	RD	3	.0045	Bcs	.0010	2.6900x .7700	2.6900x .7700	2.6900x .8100	2.6900x .7700	2.6900x1.2000	2.3700	SCI	Bsb	5	Ch	HMS	CI	Mor	68	1.1200	.375
De Soto 8-S-27	DFS	NA	N	3	.0045	Bsb	.0010	2.5000x .7300	2.5000x .7300	2.5000x .7200	2.5000x .7300	2.5000x1.1900	2.2500	SCI	Bsb	5	Ch	HMS	CI	Mor	68	1.1200	.375
8-S-25, S-26	DFS	NA	RD	3	.0045	Bsb	.0010	2.5000x .7300	2.5000x .7300	2.5000x .7200	2.5000x .7300	2.5000x1.1900	2.2500	SCI	Bsb	5	Ch	HMS	CI	Mor	68	1.1200	.375
Dodge 6-D-72	DFS	NA	RD	4	.0050	Bsb	.0010	2.5000x1.0900	2.5000x .8900	2.5000x .8900	2.5000x1.4300	None	2.0600	SCI	Bsb[1]	4	Ch	HMS	CI	Mor	48	1.0200	.500
8-D-66, D-67, D-70, D-71	DFS	NA	N	3	.0045	Bsb	.0010	2.5000x .7300	2.5000x .7300	2.5000x .7200	2.5000x .7300	2.5000x1.1900	2.2500	SCI	Bsb	5	Ch	HMS	CI	Mor	68	1.1200	.375
Imperial 8-1M1	DFS	NA	RD	3	.0045	Bsb	.0010	2.6900x .7700	2.6900x .7700	2.6900x .8100	2.6900x .7700	2.6900x1.2000	2.3700	SCI	Bsb	5	Ch	HMS	CI	Mor	68	1.1200	.375
Plymouth 6-P-30	DFS	NA	RD[2]	4	.0050	Bsb	.0010	2.5000x1.0900	2.5000x .8900	2.5000x .8900	2.5000x1.4300	None	2.0600	HCI	Bsb[1]	4	Ch	HMS	CI	Mor	48	1.0200	.500
8-P-31	DFS	NA	N	3	.0045	Bsb	.0010	2.5000x .7500	2.5000x .7500	2.5000x .7800	2.5000x .7500	2.5000x1.1900	2.1200	HCI	Bsb	5	Ch	HMS	CI	Mor	68	1.0200	.380
8-P-31 Fury	DFS	NA	RD	3	.0045	Bsb	.0010	2.5000x .7500	2.5000x .7500	2.5000x .7800	2.5000x .7500	2.5000x1.1900	2.1200	HCI	Bsb	5	Ch	HMS	CI	Mor	68	1.0200	.380
FORD MOTOR CO.																						
Continental 8-60A	AI	56.70	RFI	3	.0060	Cls	.0017	2.6239x .6930	2.6239x .6930	2.6239x .5870	2.6239x .6930	2.6239x .6930	2.2486	SAI	Bsb	5	Ch	St	CI		50	1.2320	.500
Ford 6-57A, 57B, 58A, 58B, 73A, 73B	PNI	69.30	RFI	3	.0060	Bsb	.0017	2.4984x .9230	2.4984x .9230	2.4984x .9270	2.4984x .9230	None	2.2984	SAI	Bsb	4	Ch	St	CI	NA	56	1.0000	.375
8-73A, 73B	PNI	50.18	RFI	3	.0040	Bsb	.0017	2.4984x .7280	2.4984x .7280	2.4984x .6920	2.4984x .7280	2.4984x .7260	2.1874	SAI	Bsb	5	Ch	St	CI	NA	56	1.0000	.375
8-40A, 40B, 57A, 57B, 58A, 58B	PNI	50.18	RFI	3	.0040	Cls	.0017	2.4984x .7280	2.4984x .7280	2.4984x .6620	2.4984x .7280	2.4984x .7280	2.1884	SAI	Bsb	5	Ch	St	CI	NA	56	1.0000	.375
Lincoln 8-57A, 57B, 58A, 58B, 60A, 60B, 76B	AI	56.70	RFI	3	.0060	Cls	.0017	2.6239x .6930	2.6239x .6930	2.6239x .5870	2.6239x .6930	2.6239x .6930	2.2486	SAI	Bsb	5	Ch	St	CI	NA	50	1.2320	.500
Mercury 8-57A, 57B, 58A, 58B	ACI	55.60	RFI	3	.0060	Cls	.0017	2.6239x .6930	2.6239x .6930	2.6239x .6650	2.6239x .6930	2.6239x .6930	2.1884	ACI	Bsb	5	Ch	St	CI	NA	56	1.0000	.375
8-75A	ACI	56.70	RFI	3	.0060	Cls	.0017	2.6239x .6930	2.6239x .6930	2.6239x .5870	2.6239x .6930	2.6239x .6930	2.2486	ACI	Bsb	5	Ch	St	CI	NA	50	1.2320	.500
GENERAL MOTORS CORP.																						
Buick 8-40, 50, 60, 70	1145	59.00	RA	5	.0060	Dsb	.0015	2.4985x .8040	2.4985x .8040	2.4985x .8040	2.4985x .8040	2.4985x1.1050	2.2495	ACI	Bsb	5	Ch	1140	CI	LB	52	.6880	.500
Cadillac 8-60, 62, 75	1145	71.00	RA	5	.0030	Dsb	.0016	2.6250x .9070	2.6250x .9070	2.6250x .9070	2.6250x .9070	2.6250x1.6220	2.2500	CI	Bsb	5	Ch	1118	1115	LB	48	.6875	.500
Chevrolet 6-1500, 2100, 2400	FS	80.00	RFI	3	.0065	Bsb	.0016[3]	2.6840x1.0630	2.7150x .9070	2.7460x .9620	2.7770x1.1890	None	2.3115	ACI	Bsb	4	G	St	Bfc	N			
8-1500, 2100, 2400	FS	48.00	RFI	5	.0040	Bsb[4]	.0021	2.2983x .7620	2.2983x .7620	2.2983x .7620	2.2983x .7620	2.2983x1.1690	1.9995	ACI	Bsb	5	Ch	St	ACI	LB	46	.8750	.500
8-2934	FS	48.00	RM	5	.0040	Asb[5]	.0021	2.2983x .7620	2.2983x .7620	2.2983x .7620	2.2983x .7620	2.2983x1.1690	1.9995	ACI	Bsb	5	Ch	St	ACI	LB	46	.8750	530
Oldsmobile 8-88, Super 88, 98	1145	64.25	RA	5	.0060	Asb[5]	.0013[6]	2.7500x .8180	2.7500x .8180	2.7500x .8180	2.7500x .8180	2.7500x1.1950	2.2500	ACI	Bsb	5	Ch	1140	CI	LB	48	.8438	.530
Pontiac 8-57-27, 57-28	PMI	64.50	HB	4	.0060	Dsb	.0015[7]	2.6200x .9400	2.6200x .9400	2.6200x .9400	2.6200x .9100	2.6200x1.5900	2.2500	ACIH	Bsb	5	Ch	CHS	ACH	Mor	60	1.0000	.375
STUDEBAKER-PACKARD CORP.																						
Packard 8-57L	1046	57.00	RM	1	.0045	Bsb	.0017	2.5000x1.0000	2.5000x .8750	2.5000x .8750	2.5000x .8750	2.5000x1.5156	2.0000	ACI	Bsb	5	G	CI	Bfc	N			
Studebaker 6-57G	1046	67.00	RM	1	.0045	Bsb	.0014	3.0625x1.0313	3.0625x1.0934	3.0625x1.0934	3.0625x1.5000	None	1.8125	ACI	Bsb	4	G	CI	Bfc	N			
8-57B	1046	54.00	RM	1	.0045	Bsb	.0017	2.5000x1.0000	2.5000x .8750	2.5000x .8750	2.5000x .8750	2.5000x1.5156	2.0000	ACI	Bsb	5	G	CI	Bfc	N			
8-57H	1046	57.00	RM	1	.0045	Bsb	.0017	2.5000x1.0000	2.5000x .8750	2.5000x .8750	2.5000x .8750	2.5000x1.5156	2.0000	ACI	Bsb	5	G	CI	Bfc	N			

ABBREVIATIONS

1—No. 4 bearing is cast iron.
2—None on P-30-1 Plaza.
3—No. 1 and 2 only; No. 3 and 4, .0018.
4—Steel backed aluminum alloy matrix with thin lead tin copper overlay on all bearings except rear main when equipped with two four barrel carburetors or fuel injection.
5—Rear main; babbitt, steel backed.
6—No. 1 only; No. 2, 3 and 4, .0018; No. 5, .0028.
7—No. 1 only; No. 2, 3, 4 and 5, .0018.

ACH—Alloy cast iron, cyanide hardened.
ACI—Alloy cast iron.
ACIH—Alloy cast iron, hardened.
AI—Alloy iron.
Asb—Aluminum, steel backed.
Bcs—Babbitt on copper lead alloy on steel back.
Bfc—Bakelite and fabric composition with steel hub.
Bsb—Babbitt, steel backed.
Ch—Chain.
CHS—Carburized and hardened steel.
CI—Cast iron.
Cls—Copper lead, steel backed.
DFHS—Drop forged hardened steel.
DFS—Drop forged steel.
Dsb—Durex, steel backed.
FS—Forged steel.
G—Gear.
HB—Harmonic balancer.
HCI—Hardened cast iron.
HMS—High manganese steel.
LB—Link-Belt.
Mor—Morse.
N—No or none.
NA—Not available.
PMI—Cast pearlitic malleable iron.
PNI—Pearlitic nodular iron.
RA—Rubber absorption.
RD—Rubber dynamic.
Ren—Renold.
RF—Rubber and friction.
RFI—Rubber floated.
RM—Rubber mounted.
SAI—Special alloy iron.
SCI—Special cast iron.
SCIA—Special cast iron alloy
St—Steel.

VALVES, INTAKE AND EXHAUST

PASSENGER CAR MAKE AND MODEL	Hydraulic Lifters	Special Provision for Valve Rotation (Intake or Exhaust)	Rocker Ratio—to-1	INTAKE												EXHAUST											
							Seat		Stem			Springs							Seat		Stem			Springs			
												Pressure (lb)		Length (in)									Pressure (lb)		Length (in)	
				Material	Overall Length	Actual Overall Head Diameter	Angle (Deg.)	Insert Material	Diameter (In.)	Guide Clearance	Lift (In.)	Valve Closed	Valve Open	Valve Closed	Valve Open	Material	Overall Length	Actual Overall Head Diameter	Angle (Deg.)	Insert Material	Diameter (In.)	Guide Clearance	Lift (In.)	Valve Closed	Valve Open	Valve Closed	Valve Open
AMERICAN MOTORS CORP.																											
Hudson 8-35780	Y	N	1.500	SCS	4.827	1.787	30	N	.3415	.0021	.375	88.0	155.0	1.813	1.438	2112[1]	4.827	1.406	45	N	.3410	.0026	.375	88.0	155.0	1.813	1.438
Metropolitan 4-561, 562	N	N	1.430	SCS	4.313	1.375	45	N	.3420	.0020	.325	77.5	130.0	1.531	1.206	NCAS	4.281	1.188	45	N	.3420	.0015	.325	77.5	130.0	1.531	1.206
Nash 8-5780	Y	N	1.500	SCS	4.827	1.787	30	N	.3415	.0021	.375	88.0	155.0	1.813	1.438	2112[1]	4.827	1.406	45	N	.3410	.0026	.375	88.0	155.0	1.813	1.438
Rambler 6-5710	N	N	1.463	SCS	4.759	1.594	45	N	.3415	.0026	.366	67.5	120.0	1.813	1.438	2112[1]	4.759	1.343	45	N	.3410	.0031	.361	67.5	120.0	1.813	1.438
" 8-5720	N	N	1.500	SCS	4.827	1.787	30	N	.3415	.0021	.375	88.0	155.0	1.813	1.438	2112[1]	4.827	1.406	45	N	.3410	.0026	.375	88.0	155.0	1.813	1.438
CHRYSLER CORP.																											
Chrysler 8-C-75	Y	E	1.500	SCS	4.780	1.940	45	.....	.3700	.0020	.389	83.0	177.0	1.690	1.310	NMCN	4.740	1.500	45	.....	.3700	.0030	.389	83.0	177.0	1.690	1.310
" 8-C-76	Y	E	1.500	SCS	5.090	2.000	45	.....	.3700	.0020	.389	83.0	177.0	1.690	1.310	NMCN	5.050	1.750	45	.....	.3700	.0030	.389	83.0	177.0	1.690	1.310
" 8-C-76-300	N	E	1.500	SCS	5.090	2.000	45	.....	.3700	.0020	.444[2]	60.0[3]	158.0[3]	1.660[3]	1.220[3]	NMCN	5.050	1.750	45	Al	.3700	.0030	.435[4]	60.0[3]	158.0[3]	1.660[3]	1.220[3]
De Soto 8-S-27	Y	E	1.500	SCS	4.310	1.840	45	.....	.3700	.0020	.389	72.0	166.0	1.690	1.310	CNS	4.310	1.470	45	.....	.3700	.0030	.389	72.0	166.0	1.690	1.310
" 8-S-25, S-26	Y	E	1.500	SCS	4.900	1.940	45	.....	.3700	.0020	.389	83.0	177.0	1.690	1.310	NMCN	4.920	1.750	45	.....	.3700	.0030	.389	83.0	177.0	1.690	1.310
Dodge 6-D-72	N	...	N	SCS	4.840	1.530	45	.....	.3400	.0020	.379	42.0	115.0	1.750	1.380	CNS	4.890	1.410	45	Al	.3400	.0040	.379	42.0	115.0	1.750	1.380
" 8-D-66, D-67, D-70, D-71	Y	E	1.500	SCS	4.310	1.840	45	.....	.3700	.0020	.389	72.0	166.0	1.690	1.310	CNS	4.310	1.470	45	.....	.3700	.0030	.389	72.0	166.0	1.690	1.310
Imperial 8-1M1	Y	E	1.500	SCS	5.090	2.000	45	.....	.3700	.0020	.389	83.0	177.0	1.690	1.310	NMCN	5.050	1.750	45	.....	.3700	.0030	.389	83.0	177.0	1.690	1.310
Plymouth 6-P-30	N	...	N	SCS	4.840	1.530	45	.....	.3400	.0020	.365	42.0	115.0	1.750	1.380	CNS	4.890	1.410	45	Al	.3400	.0040	.365	42.0	115.0	1.750	1.380
" 8-P-31	N	E	1.500	SCS	4.600	1.840	45	.....	.3700	.0020	.387	72.0	166.0	1.690	1.310	CNS	4.580	1.560	45	.....	.3700	.0030	.387	72.0	166.0	1.690	1.310
" 8-P-31 Fury	N	E	1.500	SCS	4.600	1.840	45	.....	.3700	.0020	.405	90.0	185.0	1.660	1.280	CNS	4.580	1.560	45	.....	.3700	.0030	.405	90.0	185.0	1.660	1.280
FORD MOTOR CO.																											
Continental 8-60A	Y	Bo	1.800	SCS	5.270	2.005	45½	N	.3420	.0015	.417	70.5	192.5	1.800	1.380	AS	5.250	1.635	45½	N	.3407	.0030	.417	70.5	192.5	1.800	1.380
Ford 8-57A, B;58A, B;73A, B	N	Bo	1.420	SCS	5.110	1.780	45½	N	.3420	.0017	.389	75.0	169.0	1.780	1.390	AS	5.090	1.510	45½	N	.3405	.0030	.389	75.0	169.0	1.780	1.390
" 8-40A, B;57A, B;58A, B;73A, B	N	Bo	1.540	SCS	5.110	1.925	45½	N	.3420	.0017	.400	75.0	169.0	1.780	1.390	AS	5.090	1.510	45½	N	.3405	.0030	.420	75.0	169.0	1.780	1.390
Lincoln 57A,B; 58A,B; 60A,B; 76B	Y	Bo	1.600	SCS	5.270	2.005	45½	N	.3420	.0015	.417	70.5	192.5	1.800	1.380	AS	5.250	1.635	45½	N	.3407	.0030	.417	70.5	192.5	1.800	1.380
Mercury 8-57A, 57B, 58A, 58B	N	Bo	1.540	SCS	5.110	1.925	45½	.....	.3420	.0015	.400	75.0	169.0	1.780	1.390	AS	5.090	1.510	45½	N	.3407	.0030	.420	75.0	169.0	1.780	1.390
" 8-75A	Y	Bo	1.600	SCS	5.270	2.005	45½	.....	.3420	.0015	.417	70.5	192.5	1.800	1.380	AS	5.250	1.635	45½	N	.3407	.0030	.417	70.5	192.5	1.800	1.380
GENERAL MOTORS CORP.																											
Buick 8-40, 50, 60, 70	Y	N	1.500	NCAS	4.704	1.875	45	N	.3720	.0030	.423	42.0[5]	96.0[5]	1.530[5]	1.110[5]	2155	4.704	1.437	45	N	.3705	.0040	.423	42.0[5]	96.0[5]	1.530[5]	1.110[5]
Cadillac 8-60, 62, 75	Y	N	1.650	3140[6]	4.675	1.875	44	N	.3420	.0015	.451	62.5	160.0	1.946	1.496	8194[7]	4.692	1.437	44	N	.3418	.0018	.451	62.5	160.0	1.946	1.496
Chevrolet 6-1500, 2100, 2400	Y	N	1.477	HAS	6.386	1.875	31	N	.3414	.0019	.400	78.0	202.0	1.858	1.462	HAS	4.923	1.500	46	N	.3414	.0019	.400	78.0	202.0	1.858	1.462
8-(265 cu. in.) 1500, 2100, 2400	Y[8]	N	1.500	HAS	4.912[9]	1.720	45	N	.3419	.0019	.334	80.0	164.0	1.696	1.306	HAS	4.923	1.500	45	N	.3414	.0024	.334	80.0	164.0	1.696	1.306
8-(283 cu. in.) 1500, 2100, 2400	Y[8]	N	1.500	HAS	4.912[9]	1.720	45	N	.3419	.0019	.398[10]	74.0	164.0	1.696	1.306	HAS	4.923	1.500	45	N	.3414	.0024	.398[11]	74.0	164.0	1.696	1.306
" 8-2934	Y[8]	N	1.500	AIS	4.912[12]	1.720	45	N	.3419	.0019	.399[10]	73.0	164.0	1.696	1.300	AIS	4.923[13]	1.500	45	N	.3414	.0024	.399[11]	74.0	164.0	1.696	1.306
Oldsmobile 8-88, Super 88, 98	Y	N	1.800	3140[14]	4.917	1.750	45	N	.3421	.0026	.419	100.0	190.0	1.880	1.480	St	4.917	1.563	45	N	.3934	.0031	.435	100.0	190.0	1.880	1.480
Pontiac 8-57-27, 57-28	Y	N	1.500	8440	5.350	1.880	30	N	.3400	.0019	.370	58.0[15]	106.0[15]	1.530[15]	1.160[15]	MCNM	5.340	1.600	45	N	.3400	.0024	.370[16]	58.0[17]	106.0[17]	1.530[17]	1.160[17]
STUDEBAKER-PACKARD CORP.																											
Packard 8-57L	N	N	1.500	8645	5.156	1.656	45	.....	.3438	.0025	.359	50.0	110.0	2.031	1.672	2112	5.156	1.531	45	.....	.3438	.0025	.359	50.0	110.0	2.031	1.672
Studebaker 8-57G	N	N	N	CNS	4.344	1.344	45	.....	.3125	.0025	.344	51.5	98.0	1.656	1.313	2112	4.344	1.281	45	.....	.3125	.0025	.344	51.5	98.0	1.656	1.313
" 8-57B, 57H	N	N	1.500	8645	5.156	1.656	45	.....	.3438	.0025	.359	50.0	110.0	2.031	1.672	2112	5.156	1.531	45	.....	.3438	.0025	.359	50.0	110.0	2.031	1.672

ABBREVIATIONS

1—Head and upper stem only; lower stem, 3150 or 8645.
2—.446 with optional camshaft.
3—Outer spring only; inner spring, 28.0 at 1.530 with valve closed and 66.0 at 1.090 with valve open.
4—.447 with optional camshaft.
5—Outer spring only; inner spring 25.5 at 1.620 with valve closed and 66.0 at 1.200 with valve open.
6—Rich only; Eaton, 8645.
7—Eaton only; Rich, head, 8212, stem, 8729.
8—No on engines with competition camshaft.
9—4.880 with two four barrel carburetor or fuel injection.
10—.394 with competition camshaft.
11—.400 with competition camshaft.
12—4.880 with fuel injection and optional camshaft or two four barrel carburetors and optional camshaft.
13—4.901 with fuel injection and optional camshaft or two four barrel carburetors and optional camshaft.
14—Thompson only; Eaton, 8645.
15—Outer spring only; inner spring 26.0 at 1.480 with valve open and 61.0 at 1.110 with valve closed.
16—.400 with automatic transmission.
17—Outer spring 112.0 at 1.130 with valve open with auto. trans.; inner spring 26.0 at 1.480 with valve closed and 61.0 at 1.110 with valve open with std. trans. and 64.0 at 1.080 with valve open with auto. trans.

Al—Alloy iron.
AIS—Alloy steel.
AS—Austenitic steel.
Bo—Both intake and exhaust.
CNS—Chromium nickel steel.
E—Exhaust.
HAS—High alloy steel.
MCNM—Manganese chrome nickel moly.
N—No or none.
NCAS—Nickel chrome alloy steel.
NMCN—Nitrogen treated manganese chromium nickel steel.
SCS—Silicon chrome steel.
St—Steel.
Y—Yes.

For Directory of Car Manufacturers listed above, see Table of Contents

VALVE TIMING, LUBRICATION, AND EXHAUST SYSTEMS

PASSENGER CAR MAKE AND MODEL	VALVE TIMING: Operating Tappet Clearance: Intake	Operating Tappet Clearance: Exhaust	Tappet Clearance for Timing: Intake	Tappet Clearance for Timing: Exhaust	Timing Mark Location	TIMING: Intake: Opens (°B.T.C.)	Intake: Closes (°A.B.C.)	Exhaust: Opens (°B.B.C.)	Exhaust: Closes (°A.T.C.)	LUBRICATION SYSTEM: Lubrication—Type: Main Bearings	Connecting Rods	Piston Pins	Camshaft Bearings	Tappets	Timing Gear or Chain	Cylinder Walls	Oil Pump Type	Normal Oil Pressure Lb. at Rpm.	Oil Pressure Gauge—Type	Type Oil Intake	Oil Filter Type	Capacity of Crankcase, Less Filter—qt.	Range in Oil Grade Recommended (S.A.E. Nos.) Summer to Subzero	EXHAUST SYSTEM: Type	Muffler Type	Exhaust Pipe Diameter (in.)	Tail Pipe Diameter
AMERICAN MOTORS CORP.																											
Hudson 8-35780	Hyd	Hyd	0	0	VD	12.5	51.5	53.5	10 5	P	P	Sp	P	P	Sp	Noz	G	55-3400	E	St	PF	5	20-5W	D	RF	2	1¾
Metropolitan 4-561, 562	.015HC	.015HC	020	.020	CP	5.0	45.0	40 0	10 0	P	P	Sp	P	P	Sp	SH	G	60-30[1]	E	St	PF	4	30-10W	S	RF	1½	1½
Nash 8-5780	Hyd	Hyd	0	0	VD	12 5	51.5	53.5	10 5	P	P	Sp	P	P	Sp	Noz	G	55-3400	E	St	PF	5	20-5W	D	RF	2	1¾
Rambler 6-5710	.01 .H	.016H	020	.021	VD	12.5	51.5	53.5	10 5	P	P	Sp	P	Sp	Sp	SH	G	50-30[1]	E	St	PF	4	30-5W	S	RF	2	1¾
8-5720	.012H	.014H	020	.022	VD	12.5	51.5	53.5	10.5	P	P	Sp	P	P	Sp	SH	G	55-3400	E	St	PF	5	20-5W	D	RF	1⅞	1¾
CHRYSLER CORP.																											
Chrysler 8-C-75-1	Hyd	Hyd	VTS	VTS	VD	13.0	59.0	59.0	17.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	FF	5	30-5W	SC[6]	RF	2¼[7]	2
8-C-75-2	Hyd	Hyd	VTS	VTS	VD	13.0	59.0	59.0	17.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	FF	5	30-5W	D	RF	2	1¾
8-C-76	Hyd	Hyd	VTS	VTS	VD	15.0	57.0	57.0	15.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	FF	5	30-5W	D	RF	2	1¾
8-C-76-300	.015	.024	VTS	VTS	VD	35 0[2]	65.0[3]	65.0[4]	25.0[5]	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	FF	5	30-5W	D	RF	2¼	2
De Soto 8-S-27	Hyd	Hyd	VTS	VTS	FDP	10 0	58 0	56 0	16.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	Sh	5	30-5W	SC[6]	RF	2¼[9]	2
8-S-25, S-26	Hyd	Hyd	VTS	VTS	VD	15.0	57.0	57.0	15.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	Sh	5	30-5W	SC[6]	RF	2¼[7]	2
Dodge 6-D-72	.010H	.010H	.014	.014	VD	12 0	44 0	50 0	6.0	P	P	Mjs	P	P	JS	MF	Mjs	R	45-1500	M	St	BP	5	30-5W	S	RF	2	1¾
8-D-56, D-67-1, D-70, D-71	Hyd	Hyd	VTS	VTS	FDP	10 0	58.0	56.0	16.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	Sh	5	30-5W	SC[6]	RF	2¼[9]	2
8-D-57-2	Hyd	Hyd	VTS	VTS	FDP	10 0	58.0	56 0	16.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	Sh	5	30-5W	D	RF	1⅞	1¾
Imperial 8-1M1	Hyd	Hyd	VTS	VTS	VD	15.0	57.0	57 0	15.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	M	St	FF	5	30-5W	D	ST[10]	2	1¾
Plymouth 6-P-30	.010H	.010H	014	.014	VD[11]	12 0	44.0	50 0	6 0	P	P	Mjs	P	P	JS	MF	Mjs	R	45-1500	E	St	BP	5	30-5W	S	RF	2	1¾
8-P-31	.008H	.018H	VTS	VTS	FDP	8 0	52 0	52 0	8 0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	E	St	Sh	5	30-5W	SC[6]	RF	2¼[9]	2
8-P-31 Fury	.008H	.018H	VTS	VTS	VD	17.0	59 0	55.0	21.0	P	P	Mjs	P	P	MF	Mjs	R	60-1500	E	St	Sh	5	30-5W	D	RF	1⅞	2
FORD MOTOR CO.																											
Continental 8-60A	Hyd	Hyd			VD	18 0	72 0	59 0	31.0	P	P	OM	P	P	Gr	PS	R	50-2000	E	St	FF	5	20-5W	D	RF[12]	1¾	1¾
Ford 6-57A, 57B, 58A, 58B, 73A, 73B	.019H	.019H	019H	019H	VD	17.0	53.0	61 0	9.0	P	P	OM	P	Gr	IP	PS	G	45-2000	E	St	FF	4	20-5W	S	TP	2	1¾
8-73A, 73B	.019H	.019H	019H	019H	VD	18 0	58 0	66 0	10 0	P	P	OM	P	Gr	Gr	PS	R	45-2000	E	St	FF	5	20-5W	S	TP	2	2
8-40A, 40B, 57A, 57B, 58A, 58B	.019H	.019H	019H	019H	VD	18 0	58 0	66 0	10.0	P	P	OM	P	Gr	Gr	PS	R	45-2000	E	St	FF	5	20-5W	D	TP	2	2
Lincoln 8-57A, 57B, 58A, 58B, 60A, 60B, 76B	Hyd	Hyd	NA	NA	VD	18 0	72 0	59 0	31.0	P	P	OM	P	P	Gr	PS	R	50-2000	E	St	FF	5	20-5W	D	TP	1¾	1¾
Mercury 8-57A, 58A	.019H	.019H	.019H	.019H	VD	18 0	58 0	66 0	10.0	P	P	OM	P	Gr	Gr	PS	R	50-2000	E	St	FF	5	20-5W	SC	RF	2	2
8-57B, 58B	.019H	.019H	.019H	.019H	VD	18 0	58 0	66.0	10.0	P	P	OM	P	Gr	Gr	PS	R	50-2000	E	St	FF	5	20-5W	D	RF	2	2
8-75A	Hyd	Hyd	NA	NA	VD	18.0	72.0	59.0	31.0	P	P	OM	P	P	Gr	PS	R	50-2000	E	St	FF	5	20-5W	D	RF	2	2
GENERAL MOTORS CORP.																											
Buick 8-40	Hyd	Hyd	.004[13]	.004[13]	HB	25.0	77.0	65.0	37.0	P	P	Sp	P	P	Dr	SN	G	40-1600	M	St	FF	5	20-5W	SC[8]	RF	2¼[7]	2
8-50, 60	Hyd	Hyd	.004[13]	.004[13]	HB	34.0	83.0	76 0	41.0	P	P	Sp	P	P	Dr	SN	G	40-1600	M	St	FF	5	20-5W	SC[8]	RF	2¼[7]	2
8-70	Hyd	Hyd	.004[13]	.004[13]	HB	34.0	83.0	76 0	41.0	P	P	Sp	P	P	Dr	SN	G	40-1600	M	St	FF	5	20-5W	D	RF	2	2
Cadillac 8-60, 62, 75	Hyd	Hyd			VD	36 0	108.0	86 0	58.0	P	P	Sp	P	P	Mcf	IJ	G	35-30[1]	E	F	PF	5	20-5W	D	RF	2[14]	1¾
Chevrolet 6-1500, 2100, 2400	Hyd	Hyd	0	0	Fly	10 5	53 5	49 0	15.0	P	P	PJ	P	P	Noz	PJ	G	30-1200	E	St	PF	5	20-5W	S	RF	2	1¾
8-(265 cu. in.) 1500, 2100, 2400	Hyd[15]	Hyd[16]	0	0	VD	18 0	72 0	52 0	20 0	P	P	PJ	P	P	P	PJ	G	30-1200	E	St	FF	3½	20-5W	SC[21]	RF	2	1½
8-(283 cu. in.) 1500, 2100, 2400	Hyd[15]	Hyd[16]	0	0	VD	12 5[17]	57 5[18]	54 5[19]	15.5[20]	P	P	PJ	P	P	P	PJ	G	30-1200	E	St	FF	3½	20-5W	SC[21]	RF	2	1½
8-2934	Hyd[15]	Hyd[16]	0	0	VD	12 5[17]	57 5[18]	54 5[19]	15.5[20]	P	P	PJ	P	P	P	PJ	G	30-1200	E	St	FF	5	20-5W	D	ST	2	1½
Oldsmobile 8-88	Hyd	Hyd	ER	ER	CB	13 5	54 5	51.5	20.5	P	P	Sp	P	P	P	P	G	40-50[1]	E	St	FF	5	20-5W	SC[8]	RF	2¼[7]	2
8-Super 88, 98	Hyd	Hyd	ER	ER	CB	13.5	54.5	51.5	20 5	P	P	Sp	P	P	P	P	G	40-50[1]	E	St	FF	5	20-5W	D	RF	2¼[7]	2
Pontiac 8-57-27, 57-28	Hyd	Hyd	ER	ER	HBP	22.0	67.0	63.0[22]	27.0[23]	P	P	Sp	P	P	MJ	MJ	G	40-40[1]	M	F	FF	5	20-5W	SC[8]	RF	2¼[7]	2
STUDEBAKER-PACKARD CORP.																											
Packard 8-57L	.024H	.024H	.030	.....	VD	11 0	54 6	51.6	14 0	P	P	Sp	P	P	Noz	DJ	G	40-1500	E	St	PF	5	30-5W	D	RF	2	1¾
Studebaker 6-57G	.016C	.016C	020	.....	VD	15 0	49 0	54 0	10 0	P	P	Sp	P	P	Noz	DJ	SG	40-1500	E	F	PF	5	30-5W	S	RF	1¾	1¾
8-57B	.024H	.024H	.030	.....	VD	11 0	54 6	51.6	14 0	P	P	Sp	P	P	Noz	DJ	G	40-1500	E	F	PF	5	30-5W	SC	RF	2[9]	1¾
8-57H President	.024H	.024H	.030	.....	VD	11.0	54 6	51 6	14.0	P	P	Sp	P	P	Noz	DJ	G	40-1500	E	F	PF	5	30-5W	D	RF	2	1¾
8-57H Golden Hawk	.024H	.024H	.030	.....	VD	11.0	54.6	51.6	14.0	P	P	Sp	P	P	Noz	DJ	G	40-1500	M	F	PF	5	30-5W	D	RF	2	1¾

ABBREVIATIONS

1—Miles per hour.
2—48.0 with optional camshaft.
3—72.0 with optional camshaft.
4—73.0 with optional camshaft.
5—47.0 with optional camshaft.
6—Dual exhaust with power package.
7—Main only; branch, 2.
8—Dual exhaust optional.
9—Main only; branch, 1⅞.
10—Front mufflers only; rear mufflers, reverse flow.
11—Fan drive pulley on P-30-1 Plaza.
12—Front muffler only; rear muffler, straight through.
13—Off seat.
14—Front pipes only, between mufflers and resonators, 1¾.
15—.012H with mechanical tappets.
16—.018H with mechanical tappets.
17—35.0 with optional camshaft.
18—72.0 with optional camshaft.
19—76.0 with optional camshaft.
20—31.0 with optional camshaft.
21—Dual exhaust with one or two four barrel carburetors or fuel injection.
22—69.0 with auto. trans.
23—31.0 with auto. trans.
BP—By-pass.
C—Cold.
CB—Crankshaft balancer.
CP—Crankshaft pulley.
D—Dual.
DJ—Directed jet.
Dr—Drip from front camshaft bearing.
E—Electric, indicated by light bulb.
ER—End of vamps used for timing.
F—Floating.
FDP—Fan drive pulley.
FF—Full flow.
Fly—Flywheel.
G—Gear.
Gr—Gravity.
H—Hot.
HB—Harmonic balancer.
HBP—Harmonic balancer pulley.
HC—Hot or cold.
Hyd—Hydraulic valve lifters, automatic take-up.
IJ—Intermittent jet.
IP—Indexed pressure.
JS—Jet spray.
M—Mechanical.
Mcf—Metered centrifugal flow.
MF—Metered flow.
MJ—Metered jet.
Mjs—Metered jet spray.
NA—Not available.
Noz—Nozzle.
OM—Oil mist.
P—Pressure.
PF—Partial flow.
PJ—Pressurized jet, cross sprayed.
PS—Pressure stream.
R—Rotary.
RF—Reverse flow.
S—Single.
SC—Single with crossover.
SG—Spiral gear.
Sh—Shunt.
SH—Squirt hole in connecting rod.
SN—Splash and nozzle.
Sp—Splash.
St—Stationary.
ST—Straight through.
TP—Three passage.
VD—Vibration damper.
VTS—Valve train solid.

FUEL AND COOLING SYSTEMS

PASSENGER CAR MAKE AND MODEL	FUEL SYSTEM													COOLING SYSTEM															
				Fuel Pump		Carburetor					Air Cleaner Type			Radiator Cap Relief Valve Pressure (lb.)	Thermostat		By-Pass Recirculation—Type	Radiator Core Type	Capacity		Full Length Water Jackets	Water All Around Cylinder	Radiator Hose							
																								Lower		Upper		By-Pass	
	Fuel Tank Capacity (Gal.)	Recommended Fuel with Standard Head	Fuel Filter Type	Pressure Range (lb.)	Vacuum Booster	Make	Model Number	Number Used	Type	Automatic Choke—Type	Standard	Optional		Type	Starts to Open at (Deg.)			With Heater (qt.)	Without Heater (qt.)			Number and Type	Inside Diameter and Length	Number and Type	Inside Diameter and Length	Number and Type	Inside Diameter and Length
AMERICAN MOTORS CORP.																													
Hudson 8-35780	20	Pre	Cer	4-5½	Std	Car	WCFB-2593-SA	1	DF	Int	OB	N		7[1]	Ch	167	In	TF	20.0	19.0	Y	Y	1 Mo	1½–14⅝	1 Mo	1¾–13⅛	N		
Metropolitan 4-561, 562	10½	Reg	N	1½–2½	N	Zen	30-VIG-10	1	DS	N	OB	N		4	Bp	158	Ex	TF	8.0	7.0	Y	Y	1 Mo	1⅛–	1 Mo	1⅛–	1 St	⅛–2⅛	
Nash 8-5780	20	Pre	Cer	4-5½	Std	Car	WCFB-2593-SA	1	DF	Int	OB	N		7[1]	Ch	167	In	TF	20.0	19.0	Y	Y	1 Mo	1½–14⅝	1 Mo	1¾–13⅛	N		
Rambler 6-5710	20	Reg	PM	4-5½	Std	Car	AS-2580-S[2]	1	DS	Int	D	OB		7[1]	Ch	167	N	TF	11.0	10.0	Y	N	1 Mo	1½–17⅞	1 Mo	1½–11⅞	N		
8-5720	20	Reg	Cer	4-5½	Std	Car	WGD-2352-SA	1	DD	Int	CF	N		7[1]	Ch	167	In	TF	21.0	20.0	Y	Y	1 Mo	1½–12½	1 Mo	1¾–12	N		
CHRYSLER CORP.																													
Chrysler 8-C-75-1	23	Pre	PC	6-7	N	BB	BBD-2527-S	1	DD	Int	PE	N		14	Pe	157	In	C-F	22.0	21.0	Y	Y	1 Mo	1¾–.....	1 Mo	1½–.....	1 Mo	⅜–...	
8-C-75-2	23	Pre	PC	6-7	N	Car	WCFB-2589-S	1	DF	Int	PE	N		14	Pe	157	In	C-F	22.0	21.0	Y	Y	1 Mo	1¾–.....	1 Mo	1½–.....	1 Mo	⅜–...	
8-C-76	23	Pre	PC	6-7	N	Car	WCFB-2590-S	1	DF	Int	PE	N		14	Pe	157	In	C-F	25.0	24.0	Y	Y	1 Mo	1¾–.....	1 Mo	1½–.....	1 Mo	⅜–...	
8-C-76-300	23	Pre	PC	6-7	N	Car	WCFB-2534-S[5]	2	DF	Int	PE	N		14	Pe	157	In	C-F	25.0	24.0	Y	Y	1 Mo	1¾–.....	1 Mo	1½–.....	1 Mo	⅜–...	
De Soto 8-S-27	20	Reg	PC	6-7	N	Str	WW-3-149[6]	1	DD	Rmc	PE	N		14	Pe	157	In	C-F	21.0	20.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	N		
8-S-25	23	Pre	PC	6-7	N	BB	BBD-2522-S	1	DD	Int	PE	N		14	Pe	157	In	C-F	21.0	20.0	Y	Y	1 Mo	1¾–.....	1 Mo	1½–.....	1 Mo	⅜–...	
8-S-26	23	Pre	PC	6-7	N	Car	WCFB-2588-S	1	DF	Int	PE	N		14	Pe	157	In	C-F	21.0	20.0	Y	Y	1 Mo	1¾–.....	1 Mo	1½–.....	1 Mo	⅜–...	
Dodge 8-D-72	20	Reg	PI	4-6	N	Str	WW-3-159[8]	1	DD	Int	PE	N		14	Pe	157	In	C-F	14.0	13.0	Y	N	1 Mo	1½–.....	1 Mo	1½–.....	N		
8-D-66, D-67-1	20	Reg	PC	6-7	N	Str	WW-3-149[6]	1	DD	Rmc	PE	N		14	Pe	157	In	C-F	21.0	20.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	N		
8-D-70, D-71	22	Reg	PC	6-7	N	Str	WW-3-149[6]	1	DD	Rmc	PE	N		14	Pe	157	In	C-F	21.0	20.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	N		
8-D-67-2	20	Pre	PC	6-7	N	Car	WCFB-2532-S	1	DF	Rmc	PE	N		14	Pe	157	In	C-F	21.0	20.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	N		
Imperial 8-1M1	23	Pre	PC	6-7	N	Car	WCFB-2590-S	1	DF	Int	PE	N		14	Pe	157	In	C-F	25.0	24.0	Y	Y	1 Mo	1¾–.....	1 Mo	1½–.....	1 Mo	⅜–...	
Plymouth 6-P-30	20	Reg	PI	6-7	N	BB	BBS-2567-S[10]	1	DS	Int	PE	N		14	CP	157	In	C-F	14.0	13.0	Y	N	1 Mo	1½–.....	1 Mo	1½–.....	N		
8-P-31	20	Reg	PC	6-7	N	BB[9]	BBD-2512-S[9]	1	DD[9]	Rmc	PE	N		14	CP	157	In	C-F	21.0	20.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	1 Mo	⅜–...	
8-P-31 Fury	20	Pre	PC	6-7	N	Car	WCFB-2631-S[11]	2	DF	Rmc	PE	N		14	CP	157	In	C-F	21.0	20.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	1 Mo	⅜–...	
FORD MOTOR CO.																													
Continental 8-60A	25	Pre	PFC	4½–5½	Std	Car	.....	1	DF	Int	D	N		13½	CP	158	Ex	CFT	25.5	23.0	Y	Y	1 Mo	2–12¹¹⁄₁₆	1 Mo	1¾–12	N	.....	
Ford 8-57A, 57B, 58A, 58B, 73A, 73B	20	Reg	PF	4-5	Opt	Hol	NA	1	DS	N	D	N		13½	CP	157	In	TF	16.0	15.0	Y	Y	1 Mo	2–8⅛	1 Mo	1½–10¹¹⁄₁₆	N	.....	
8-73A, 73B	20	Reg	PF	4-5	Opt	Fo	NA	1	DD	Int	D	N		13½	CP	157	Ex	TF	20.0	19.0	Y	Y	1 Mo	2–8⅛	1 Mo	1½–10¹¹⁄₁₆	N	.....	
8-57A, 57B, 58A, 58B	20	Reg	PF	4-5	Std	Fo	NA	1	DD	Int	D	N		13½	CP	157	Ex	TF	20.0	19.0	Y	Y	1 Mo	2–8⅛	1 Mo	1½–10¹¹⁄₁₆	N	.....	
8-(292 cu. in.) 40A, 40B	20	Reg	PF	4-5	Std	Hol	NA	1	DD	Int	D	N		13½	CP	157	Ex	CFT	21.0	20.0	Y	Y	1 Mo	2–8⅛	1 Mo	1¾–10	1 St	⅝–4¼	
8-(312 cu. in.) 40A, 40B	20	Reg	PF	4-5	Std	Hol	NA	1	DD	Int	D	N		13½	CP	157	Ex	CFT	21.0	20.0	Y	Y	1 Mo	2–8⅛	1 Mo	1¾–10	1 St	⅝–4¼	
Lincoln 8-57A, 57B, 58A, 58B, 60A, 60B, 76B	20	Pre	PFC	4½–5½	Std	Car	NA	1	DF	Int	D	N		13½	CP	158	Ex	CFT	25.0	23.0	Y	Y	1 Mo	2–13¹¹⁄₁₆	1 Mo	1¾–12	N	.....	
Mercury 8-57A, 57B, 58A, 58B	20	Pre	PF	4-5	Std	C-H	NA	1	DF	Int	D	N		13½	Ch	157	Ex	C-F	21.0	20.0	Y	Y	1 Mo	2–12	1 Mo	1½–12¹¹⁄₁₆	1 Mo	⅝–3⅞	
8-75A	20	Pre	PFC	4½–5½	Std	Car	NA	1	DF	Int	D	N		13½	Ch	158	Ex	C-F	24.0	23.0	Y	Y	1 Mo	2–12¹¹⁄₁₆	1 Mo	1¾–13	1 Mo	⅝–1¹³⁄₁₆	
GENERAL MOTORS CORP.																													
Buick 8-40	20	Reg	WC	6½	Std	C-S	WGD[13]	1	DD	Int	OB	N		13	Ch	157	In	TC	18.0	16.5	N	Y	1 Mo	1⅜–.....	1 Mo	1⅛–.....	N	.....	
8-50, 60, 70	20	Pre	WC	6½	Std	C-R	AFB[14]	1	DF	Int	OB	N		13	Ch	157	In	TC	18.0	16.5	N	Y	1 Mo	1⅜–.....	1 Mo	1⅛–.....	N	.....	
Cadillac 8-60	20	Pre	.....	5½–6½	Std	C-R	2479[15]	1	DF	Int	OB	N		13½	Ch	163	In	TC	20.5	19.5	Y	Y	1 Mo	1¾–10¾	1 Mo	1¾–10¼	N	.....	
8-62	20	Pre	.....	5½–6½	Std	C-R	2479[16]	1[16]	DF	Int	OB	N		13½	Ch	163	In	TC	20.5	19.5	Y	Y	1 Mo	1¾–10¾	1 Mo	1¾–10¼	N	.....	
8-75	20	Pre	.....	5½–6½	Std	C-R	2479[15]	1	DF	Int	OB	N		13½	Ch	163	In	TC	21.5	19.5	Y	Y	1 Mo	1¾–10¾	1 Mo	1¾–10¼	N	.....	
Chevrolet 6-1500, 2100, 2400	16	Reg	Sa	3½–4½	N	Roc	7009657[17]	1	DS	Int	OW	OB		7	Ch	160	In	Cel	17.0	16.0	Y	Y	1 Mo	1¾–16½	1 Mo	1½–5¼	N	.....	
8-(265 cu. in.) 1500, 2100, 2400	16	Reg	Sc	4-5¼	N	Roc	7010647	1	DD	Int	OB	N		7	Ch	160	In	Cel	17.0	16.0	Y	Y	1 Mo	1¾–10¾	1 Mo	1½–13½	N	.....	
8-(283 cu. in.) 1500, 2100, 2400	16	Reg	Sc	4-5¼	N	Roc	7010648	1	DD	Int	OB	N		7	Ch	160	In	Cel	17.0	16.0	Y	Y	1 Mo	1¾–10¾	1 Mo	1½–13½	N	.....	
8-2934	16½	Reg	Stn	4½–5½	N	C-R	3744925	1	DF	Int	OW	D		7	Ch	160	In	Cel	17.0	16.0	Y	Y	1 Mo	1¾–15	1 Mo	1½–16½	N	.....	
Oldsmobile 8-88, Super 88, 98	20	Pre	Sar	5–6	Std	Roc	4-GC	1	DF	Int	D	OB		13½	Ch	157	In	TC	21.0	20.0	Y	Y	1 Mo	1¾–14⅛	1 Mo	1½–11¹¹⁄₁₆	N	.....	
Pontiac 8-57-27 Chieftain	20	Reg	PF	4-5	Std	Roc	7009632[26]	1	DD	Int	OE	OB		13½	Ch	170	In	TC	23.1	21.7	Y	Y	1 Mo	2–9¾	1 Mo	1¾–14⅛	2 St	1½–3⅛	
8-57-27 Super Chief, Star Chief, 57-28	20	Reg	PF	4-5	Std	Roc[25]	7008829[25]	1	DF	Int	OE	OB		13½	Ch	170	In	TC	23.1	21.7	Y	Y	1 Mo	2–9¾	1 Mo	1¾–14⅛	2 St	1½–3⅛	
STUDEBAKER-PACKARD CORP.																													
Packard 8-57L	18	Pre	Cer	6-7	N	Str	WW-6-121	1	DD	Int	PP	N		13	Ch	170	In	CT	18.5	17.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	N	.....	
Studebaker 8-57G	18	Reg	Sc	3½–5½	N	Car	WE-2417-S	1	DS	Int	PP	OB		13	Ch	170	In	CT	12.5	11.0	Y	N	1 Mo	1¼–.....	1 Mo	1¼–.....	N	.....	
8-57B	18	Reg	Cer	3½–5½	N	Str	WW-6-117	1	DD	Int	PP	OB		13	Ch	170	In	CT	18.5	17.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	N	.....	
8-57H	18	Reg	Cer	3½–5½	N	Str[27]	WW-6-117-A[27]	1	DD[27]	Int	PP[28]	OB[29]		13	Ch	170	In	CT	18.5	17.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	N	.....	
8-57H Golden Hawk	18	Pre	Cer	6-7	N	Str	WW-6-121	1	DD	Int	PP	N		13	Ch	170	In	CT	18.5	17.0	Y	Y	1 Mo	1½–.....	1 Mo	1½–.....	N	.....	

ABBREVIATIONS

1—13 with air conditioning.
5—Front only; rear, WCFB-2589-S.
6—WW-3-150 with auto. trans.
8—WW-3-160 with auto. trans.
9—Or Stromberg WW-15-23 with std. trans.; Ball and Ball BBD-2513-S or Stromberg WW-15-24 with overdrive; Ball and Ball BBD-2514-S or Stromberg WW-15-25 with auto. trans.
10—BBS-2568-S with overdrive; BBS-2569-S with auto. trans.
11—Front only; rear, WCFB-2632-S.
13—Carter only; Stromberg, WW.
14—Carter only; Rochester, 4-GC.
15—Carter only; Rochester, 7010100; Carter, 24808 and Rochester, 7010101 with air conditioning.
16—Carter only; Rochester, 7010100; Carter 25825 and Rochester 7010302 on the front and Carter 25835 and Rochester 7010300 on the rear of Eldorado models. (Footnote [15] also applies.)
17—7009656 with auto. trans.
25—Rochester 7009830 or Carter AFB-2506-S with auto. trans.
26—7009831 with auto. trans.
27—Classic and Silver Hawk models use Carter WCFB-2574-S with std. trans. or overdrive and WCFB-2575-S with auto. trans. These are four barrel carburetors.
28—Oil bath on Classic and Silver Hawk.
29—None on Classic and Silver Hawk.

BB—Ball and Ball. Bp—By-pass.
Car—Carter. Cel—Cellular.
CF—Cellulose fiber. Cer—Ceramic.
C-F—Cellular tubular or fin and tube.
CFT—Corrugated fin and tube.
Ch—Choke. C-H—Carter or Holley.
CP—Choke-pellet.
C-R—Carter or Rochester.
C-S—Carter or Stromberg.
CT—Cellular-tubular.
D—Dry. DD—Downdraft, dual throat.
DF—Downdraft, four barrel.
DS—Downdraft, single throat.
Ex—External. N—No or none.
Fo—Ford. NA—Not available.
Hol—Holley. OB—Oil bath.
In—Internal. OE—Oiled element.
Int—Integral. Opt—Optional.
Mo—Moulded. OW—Oil wetted.
PC—Plastic and ceramic.
Pe—Pellet. PE—Paper element.
PF—Porous fiber.
PFC—Porous fiber or ceramic.
Pl—Plastic. PM—Porous metal.
PP—Plasticized paper, water repellant and resistant.
Pre—Premium. Reg—Regular.
Rmc—Remote in manifold crossover.
Roc—Rochester Products.
Sar—Saran. Std—Standard.
Sc—Screen. Stn—Strainer.
St—Straight. Str—Stromberg.
TC—Tube and center.
TF—Tube and fin. Y—Yes.
WC—Wire cloth. Zen—Zenith, Ltd.

For Directory of Car Manufacturers listed above, see Table of Contents

DRIVE BELTS, AND ELECTRICAL SUPPLY SYSTEM

PASSENGER CAR MAKE AND MODEL	DRIVE BELTS: Fan: Number Used	Fan: Angle of V (deg.)	Fan: Outside Length (in.)	Fan: Width (in.)	Generator: Angle of V (deg.)	Generator: Outside Length (deg.)	Generator: Width (in.)	BATTERY: Make	Model	Voltage Rating	Plates per Cell—Amp. Hour Rating	Terminal Grounded	ELECTRICAL SUPPLY SYSTEM: Generator: Make	Model	Type	Ratio—Gen to Cr's rev. (To —1)	Regulator: Make	Model	Type	Cut-out Relay: Closing Voltage at Generator R.P.M.	Cut-out Relay: Reverse Current to Open (amp.)	Regulated: Voltage	Regulated: Current	Minimum Generated R.P.M. Required	Voltage Test Conditions: Temperature (deg.)	Voltage Test Conditions: Load	Voltage Test Conditions: Other
AMERICAN MOTORS CORP.																											
Hudson 8-35780	1	38[1]	56 11/32[2]	11/16[3]	5B			AL	11-HS-60	12	11-60	Neg	DR	1102018[4]	Sh	2.34	DR	1119003[5]	CV	12.8-1300	1-3½	14.5	30[6]	2400[7]	H	10 amp	
Metropolitan 4-561, 562	1	32	34 7/8	5/8	SB			Luc	GTW-9-A-2	12	9-51	Pos	Luc	C-39-PV-2	Sh	1.31	Luc	RB-105-2	TC	12.7-13.3-1125	3½-5	15 6-16.2		1000	68F	OC	
Nash 8-5780	1	38[1]	56 11/32[2]	11/16[3]	SB			AL	11-HS-60	12	11-60	Neg	DR	1102018[4]	Sh	2.34	DR	1119003[5]	CV	12.8-1300	1-3½	14.5	30[6]	2400[7]	H	10 amp	
Rambler 6-5710	1	40	37 1/16[8]	11/16[9]	SB			AL	11-MS-45[10]	12	7-45[11]	Neg	DR	1100304[12]	Sh	2.08	DR	1119122[13]	CV	12.8-1300	1-3½	14.5	25[14]	2775[15]	H	10 amp	
8-5720	1	38[1]	56 11/32[2]	11/16[3]	SB			AL	11-HS-50[10]	12	9-50[11]	Neg	DR	1100304[12]	Sh	2.34	DR	1119122[13]	CV	12.8-1300	1-3½	14.5	25[14]	2775[15]	H	10 amp	
CHRYSLER CORP.																											
Chrysler 8-C-75-1	2	36½	36½	5/8	36½	39¼	5/8	AL	12-H-60	12	11-60	Neg	AL	GJC-7012-A	Sh	2.16[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-C-75-2	3	36½	43¼[16]	5/8	36½	39¼	5/8	AL	12-H-60	12	11-60	Neg	AL	GJC-7012-A	Sh	2.16[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-C-76	3	36½	43¼[16]	5/8	36½	39¼	5/8	AL	12-H-70	12	13-70	Neg	AL	GHM-6001-E	Sh	2.16[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-C-76-300	2	36½	36½	5/8	36½	39¼	5/8	AL	12-H-70	12	13-70	Neg	AL		Sh	2.16[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
De Soto 8-S-27	1	36½	57 5/8	5/8	5B			A-W	11-HS-50[19]	12	9-50	Neg	AL	GJC-7012-A	Sh	2.00[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-S-25, S-26	2[18]	36½	35½	5/8	36½	39½	5/8	A-W	11-HS-60[20]	12	11-60	Neg	AL	GJC-7012-A	Sh	2.16[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
Dodge 6-D-72	1[21]	36½	40	5/8	SB			A-W	11-HS-50[19]	12	9-50	Neg	AL	GJC-7012-A	Sh	2.12	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-D-66, D-67, D-70, D-71	1[21]	36½	57 5/8	5/8	SB			Gou	11-OE-53	12	9-53	Neg	AL	GJC-7012-A	Sh	2.00[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
Imperial 8-1M1	3	36½	43¼[16]	5/8	36½	39¼	5/8	AL		12	13-70	Neg	AL	GHM-6001-E	Sh	2.16[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
Plymouth 6-P-30	1[21]	36½	40	5/8	SB			A-W	11-HS-50[19]	12	9-50	Neg	AL	GJC-7012-A	Sh	2.00[22]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-P-31, P-31 Fury	1[21]	36½	57¾	5/8	SB			A-W	11-HS-50[19]	12	9-50	Neg	AL	GJC-7012-A	Sh	2.00[17]	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
FORD MOTOR CO.																											
Continental 8-60A	2	38	46¼	1/2	SB			AL		12	13-65	Neg	Fo	FGP-10000-A	Sh	2.25	F-A	FBF-10505-A	C	12.0-12.8	2-6	14.6-15.4	38-42	3000	75F	5 amp	
Ford 6-57A, B; 58A, B; 73A, B	1	38	36	5/8	SB			Var		12	11-55	Neg	Fo	FEG-10000-B	Sh	2.00	F-A		C	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	
8-57A, 57B, 58A, 58B, 73A, 73B	1	38	44½	5/8	SB			Var		12	11-55	Neg	Fo	FEH-10000-B	Sh	2.00	F-A		C	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	
8-40A, 40B	1	38	45 3/4	1/2	SB			Var		12	11-55	Neg	Fo	FEJ-10000-C	Sh	2.00	Fo	FEJ-10505-B	C	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	
Lincoln 8-57A, B; 58A, B; 60A, B; 76B	2	38	46¼	1/2	SB			Var		12	13-70	Neg	Fo	FGP-10000-B	Sh	2.26	F-A	FEL10505B-C	C	12.0-12.8	2-4	14.6-15.4	28-32	3000	75F		
Mercury 8-57A, 57B, 58A, 58B	1	38	44½	5/8	SB			Var		12	11-55	Neg	Fo		Sh	2.00	F-A		C	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	
8-75A	2	38	46¼	1/2	SB			Var		12	13-70	Neg	Fo		Sh	2.00	F-A		C	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	
GENERAL MOTORS CORP.																											
Buick 8-40, 50, 60, 70	1	38	53	5/8	SB			DR		12	11-70	Neg	DR	1102066	Sh	2.40	DR	1119168	CV	11.8-13.6	1-6	14.0-15.0	32-38	2600	150F	10 amp	BC
Cadillac 8-60, 62	1	40	57 1/4	5/8	SB			DR		12	11-70	Neg	DR	1102086	TP	2.15	DR	1119002	CV	11.0-13.6	0-4	14.0-15.0	NA	2150	NA	NA	NA
8-75	1	40	57 1/4	5/8	SB			DR		12	11-70	Neg	DR	1102086[23]	TP	2.15	DR	1119002[24]	CV	11.0-13.6	0-4	14.0-15.0	NA	2150	NA	NA	NA
Chevrolet 6-1500, 2100, 2400	1	41	40 1/2	5/8	SB			DR	2-SMR-53-W	12	9-53	Neg	DR	1100326	Sh	2.31	DR	1119000	CV	12.8-1300	NA	14.5	25	2980	Op	10 amp	N
8-1500, 2100, 2400	1	41[25]	54 1/4[26]	5/8[27]	SB			DR	2-SMR-53-W	12	9-53	Neg	DR	1100321[28]	Sh	2.31	DR	1119000[29]	CV	12.8-1300	NA	14.5	25[30]	2980	Op	10 amp	N
8-2934	1	41	54 1/4	5/8	SB			DR	2-SMR-53-W	12	9-53	Neg	DR	1120043	Sh	2.00	DR	1119001	CV	12.8-1300	NA	14.5	30	2950	Op	10 amp	N
Oldsmobile 8-88, Super 88, 98	1	38	57½	5/8	SB			DR	3-KMR-70	12	11-70	Neg	DR	1102085	Sh	2.24	DR	1119001	CV	12.8	0-4	14.5	30	3200	80F	10 amp	CR
Pontiac 8-57-27, 57-28	1	38	50 1/4	5/8	SB			DR	458[31]	12	9-53[32]	Neg	DR	1100304	Sh	2.47	DR	1119000	CV	11.8-13.6	NS	14.3	25	2850	H	IIL	FR
STUDEBAKER-PACKARD CORP.																											
Packard 8-57L	1	39	57	5/8	SB			Wil	HDW-2SM-50	12	9-50	Neg	DR	1102003	Sh	2.09	DR	1119123	CV	11.8-14.2	0-½	14.7-15.7	38	2200	70F	10 amp	3500R
Studebaker 6-57G	1	39	40	5/8	SB			Wil	HDW-2SM-50	12	9-50	Neg	AL	GJC-7002-F	Sh	1.84	AL	VRX-6008-A	CV	13.0-13.7	0-½	14.2-14.9	30	2200	70F	10 amp	3500R
8-57B, 57H	1	39	57	5/8	SB			Wil	HDW-2SM-50	12	9-50	Neg	DR	1102003	Sh	2.09	DR	1119123	CV	11.8-14.2	0-½	14.7-15.7	30	2200	70F	10 amp	3500R

ABBREVIATIONS

1—Or 40.
2—Or 56 5/8.
3—Or 13/16.
4—1102070 with air conditioning.
5—1119168 with air conditioning.
6—35 with air conditioning.
7—2650 with air conditioning.
8—Or 37.
9—Or 3/4.
10—11-HS-60 with air conditioning.
11—11-60 with air conditioning.
12—1102018 with air conditioning.
13—1109003 with air conditioning.
14—30 with air conditioning.
15—2400 with air conditioning.
16—Also drives power steering pump.
17—2.12 with air conditioning.
18—Three with power steering or air conditioning; four with both.
19—Willard, HO-11-50.
20—Willard, HO-11-60.
21—Two with power steering; three with air conditioning; four with both.
22—2.12 with power steering.
23—1102060 with air conditioning.
24—1119162 with air conditioning.
25—40 with fuel injection.
26—54 1/2 with fuel injection.
27—13/16 with fuel injection.
28—1102042 with fuel injection.
29—1119001 with fuel injection.
30—30 with fuel injection.
31—558 with auto. trans.
32—60 with auto. trans.
amp—Amperes.
AL—Auto-Lite.
A-W—Auto-Lite or Willard.
BC—Battery must be in circuit for voltage check.
C—Three coil.
CR—Cycle regulator.
CV—Current and voltage control.
DR—Delco-Remy.
F—Degrees fahrenheit.
F-A—Ford or American Bosch.
Fo—Ford.
FR—Fixed resistance method.
Gou—Gould.
H—Hot.
IIL—Ignition and instrument load only.
Luc—Lucas.
N—No or none.
NA—Not available.
Neg—Negative.
NS—Not specified.
OC—Open circuit.
Op—Operating.
Pos—Positive.
R—Revolutions per minute.
RO—Rated output.
SB—Same belt used to drive fan and generator.
Sh—Shunt.
TC—Temperature compensated.
TP—Two pole.
Var—Various.
Wil—Willard.

STARTING AND IGNITION SYSTEMS

PASSENGER CAR MAKE AND MODEL	STARTING SYSTEM: MOTOR											STARTING SYSTEM: DRIVE				IGNITION SYSTEM: COIL				IGNITION SYSTEM: DISTRIBUTOR								
					Lock Test			No Load Test										Amps.				Spark Advance Data (at distributor shaft)						
	Make	Model	Engine Cranking Speed (RPM)	Test Conditions	Amps.	Volts	Torque (ft. lb.)	Amps.	Volts	RPM (min.)	Starting Procedure	Engagement—Type	Number Teeth: Pinion	Number Teeth: Flywheel	Flywheel Tooth Face Width	Make	Model	Engine Stopped	Engine Idling	Make	Model	Centrifugal Advance (Average of Degrees): Start (RPM)	Centrifugal Advance (Average of Degrees): Maximum (at RPM)	Vacuum Advance Start (in Hg.)	Vacuum Advance (max. deg. @ in. Hg.)	Breaker Gap (in.)	Cam Angle (deg.)	Breaker Arm Tension (oz.)
AMERICAN MOTORS CORP.																											
Hudson 8-35780	DR	1107648	NA		435	5.8	10.5	75	10.3	6900	Tik[1]	SA	9	176	.438	DR	1110594	3.75	2.30	DR	1110887	0°-300	19.0°-1900	0°-6.0	11.6°-14.0	.016	30	21
Metropolitan 4-561, 562	Luc	M-35-G-1	325	RT	380	7.5	9.3	45	12.0	8500	Pbd	BT	9	120	.375	Luc	LA-12	2.70	.90	Luc	DM-2	0°-600	7.0°-1700	0°-6.0	12.0°-16.0	.015	30	22
Nash 6-5780	DR	1107648	NA		435	5.8	10.5	75	10.3	6900	Tik[1]	SA	9	176	.438	DR	1110594	3.75	2.30	DR	1110887	0°-300	19.0°-1900	0°-6.0	11.0°-14.0	.016	33	21
Rambler 6-5710	DR	1107647	NA		435	5.8	10.5	75	10.3	6900	Tik[1]	SA	9	149[2]	.438	DR	1110594	3.75	1.70	DR	1110242	0°-325	14.0°-1600	0°-7.0	8.0°-16.5	.016	32	21
8-5720	DR	1107648	NA		435	5.8	10.5	75	10.3	6900	Tik[1]	SA	9	176	.438	DR	1115105	3.75	2.30	DR	1110884	0°-325	20.0°-1700	0°-6.5	13.0°-15.0	.016	30	21
CHRYSLER CORP.																											
Chrysler 8-C-75	AL	MDL-6001	150	CW	225	4.0	6.0	85	4.0	3400	Tik[3]	SS	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBP-4002-A	0°-395	13.0°-2050	0°-10.5	10.5°-16.0	.017	31	19
8-C-76	AL	MDL-6001	150	CW	225	4.0	6.0	85	4.0	3400	Tik[3]	SS	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBK-4304	0°-350	10.0°-2250	0°-8.1	11.0°-16.0	.017	31	19
8-C-76-300	AL	MDL-6001	150	CW	225	4.0	6.0	85	4.0	3400	Tik[3]	SS	9	172	.375	AL	CAH-4001	3.10	2.50	AL						.017	31	19
De Soto 8-S-27	AL	MDL-6003	150	CW	225	4.0	6.0	60	4.0	3400	Tik	IFT	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBP-4002	0°-485	8.5°-1700	0°-8.1	9.5°-16.0	.017	31	19
8-S-25	AL	MDL-6001	150	CW	225	4.0	6.0	85	4.0	3400	Tik	SS	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBP-4001	0°-350	10.0°-1700	0°-10.5	15.0°-18.0	.017	31	19
8-S-26	AL	MDL-6001	150	CW	225	4.0	6.0	85	4.0	3400	Tik	SS	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBP-4001-A	0°-355	9.0°-2300	0°-10.5	15.0°-18.0	.017	31	19
Dodge 6-D-72	AL	MDM-6001[4]	150	CW	210[5]	4.0	5.0[5]	50[5]	11.0	3600[5]	Tik	IFT	9	172	.375	AL	CAG-4001	2.40	1.80	AL	IBR-4001	0°-350	8.5°-1800	0°-6.1	9.5°-16.0	.017	39	19
8-D-66, D-67-1, D-70, D-72	AL	MDL-6003	150	CW	225	4.0	6.0	60	11.0	3400	Tik[3]	IFT	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBP-4002[6]	0°-455[6]	8.5°-1700[6]	0°-7.1	13.0°-18.0	.017	31	19
8-D-67-2	AL	MDL-6003	150	CW	225	4.0	6.0	60	11.0	3400	Tik[3]	IFT	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBP-4002-B	0°-350	8.0°- 850	0°-7.1	13.0°-18.0	.017	31	19
Imperial 8-1M1	AL	MDL-6001	150	CW	225	4.0	6.0	85	4.0	3400	Pth	SS	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBK-4304	0°-350	10.0°-2250	0°-8.1	11.0°-16.0	.017	31	19
Plymouth 6-P-30	AL	MDM-6001[4]	150	CW	210[5]	4.0	5.0[5]	50[5]	11.0	3600[5]	Tik	IFT	9	172	.375	AL	CAG-4001	2.40	1.80	AL	IBR-4001	0°-350	8.5°-1800	0°-6.1	9.5°-16.0	.020	39	19
8-P-31-1	AL	MDM-6001	150	CW	210	4.0	5.0	50	11.0	3600	Tik	IFT	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBP-4003-C	0°-350	15.0°-2150	1.0°-8.1	12.5°-15.5	.017	31	19
8-P-31-2, P-31-3	AL	MDM-6001	150	CW	210	4.0	5.0	50	11.0	3600	Tik	IFT	9	172	.375	AL	CAH-4001	3.10	2.50	AL	IBP-4003[7]	0°-500[8]	9.5°-2200[9]	0°-7.1[10]	13.0°-18.0[11]	.017	31	19
8-P-31 Fury	AL	MDM-6001	150	CW	210	4.0	5.0	50	11.0	3600	Tik	IFT	9	172[3]	.375	AL	CAH-4001	3.10	2.50	AL	IBS-4003	0°-350	8.0°-1000	0°-9.1	10.3°-18.0	.017	38	19
FORD MOTOR CO.																											
Continental 8-60A	Fo	FAR-11001-A	165	85F	550	5.0	15.5	85	12.0	4500	Tik	BF	9	152	.375	F-E	FAC12029A	4.50	2.50	Hol	FEK12127C	0°-300	13.5°-2000	.5°-5.0	8.0°-13.0	.015	27	19
Ford 6-57A, B; 58A, B; 73A, B	Fo	FAR-11001-A	165	85F	550	5.0	15.5	85	12.0	4500	Tik	BF	9	146[12]	.375	F-E	FEG12029A	4.50	2.50	Hol	12127A					.025	37	19
8-57A, B; 58A, B; 73A, B	Fo	FAR-11001-A	165	85F	550	5.0	15.5	85	12.0	4500	Tik	BF	9	146[12]	.375	F-E	FEH12029A	4.50	2.50	Hol	FEH12127A	7°-1000	35.0°-4000	6.0°-8.0	22.0°-18.0	.015	27	19
8-40A, 40B	Fo	FEJ-11001-A	165	85F	550	5.0	15.5	85	12.0	4500	Tik	BF	9	146[12]	.375	Fo	FEJ12029A	4.50	2.50		FEJ12127B	7°-1000	35.0°-4000	0°-5.0	22.0°-18.0	.015	27	19
Lincoln 8-57A, B; 58A, B; 60A, B; 73A	Fo	FAR-11001-A	165	85F	550	5.0	15.5	85	12.0	4500	Tik	BF	9	152	.375	F-E	12029A	4.50	2.50	Hol	12127B	4°-800	27.0°-4000	0°-5.0	16.0°-15.0	.015	27	19
Mercury 8-57A, 57B, 58A, 58B, 75A	Fo		165	85F	550	5.0	15.5	85	12.0	4500	Tik[13]	BF	9	146[14]	.375	F-E		4.50	2.50	F-H		2°-900	25.5°-4000	0°-5.0	24.0°-15.0	.015	27	19
GENERAL MOTORS CORP.																											
Buick 8-40, 50, 60, 70	DR	1107667	160	OT	365	3.5	NA	91	10.6	3240	Dap	SOC	9	166	.573	DR	1115100[15]	4.50	2.50	DR	1110870	0°-315	13.3°-1875	0°-7.5	9.8°-14.0	.015	30	21
Cadillac 8-60, 62, 75	DR	1107657		NA	395	3.5		91	10.6	3900	Tik	SSC	9	176	.500	DR	1115082	3.00	1.25	DR	1110876	0°-375	24.0°-4140	0°-9.0	24.0°-14.4	.016	31	21
Chevrolet 6-1500, 2100, 2400	DR	1107652	NA	OT	NA	NA	NA	75	10.3	6900	Tik	PSS	9	168	.414	DR	1115085	4.00	1.80	DR	1112403	0°-300	13.0°-1750	0°-9.0	7.5°-13.0	.019	32	21
8-1500, 2100, 2400	DR	1107664[16]	NA	OT	NA	NA	NA	75	10.3	6900	Tik	PSS	9	168	.414[17]	DR	1115083[18]	4.00	1.80	DR	1110874[19]	0°-375	18.0°-1800	0°-6.0	11.0°-12.8	.NA	30	21
8-2934	DR	1107664	NA	OT	NA	NA	NA	75	10.3	6900	Tik	PSS	9	168	.414	DR	1115091[18]	4.00	1.80	DR	1110891[19]	0°-275	20.0°-1850	N	N	.018	29	21
Oldsmobile 8-88, Super 88, 98	DR	1107665	150	CW	N	N	N	100	10.6	3600	Tik	HOC	9	176	.445	DR	1115104	4.50	2.00	DR	1110883	0°-800	26.0°-4400	0°-5.5	22.0°-17.0	.016	30	21
Pontiac 8-57-27, 57-28	DR	1107661	140	RT	NR			83	10.6	4400	Tik	SGO	9	176	.500[20]	DR	1115085	3.50	1.20	DR	1110871	0°-313	13.0°-2150	0°-7.0	11.0°-15.0	.016	30	21
STUDEBAKER-PACKARD CORP.																											
Packard 8-57L	DR	1107650	150	OT	435	5.8	14.0	75	11.0	5000	Tik	BF	9	162	.375	DR	1115096		3.80	DR	1110864	0°-300	12.0°-1125	0°-5.0	8.0°-12.0	.016	31	21
Studebaker 8-57G	AL	MBG-4103	170	OT	235	4.0	5.2	55	10.0	5200	Tik	BT	9	124	.375	AL	CAF-4004		4.00	AL	IAT-4201	0°-425	7.0°-1400	0°-4.0	9.0°-12.0	.020	28	19
8-57B	DR	1107650[21]	150	OT	435	5.8	14.0	75	11.0	5000	Tik	BF	9	133	.375	DR	1115097		3.80	DR	1110864	0°-500	12.0°-1100	0°-5.0	8.0°-11.0	.016	31	21
8-57H	DR	1107650	150	OT	435	5.8	14.0	75	11.0	5000	Tik	BF	9	133	.375	DR	1115097[22]		3.80	DR	1110864	0°-300	12.0°-1125	0°-5.0	8.0°-11.0	.016	31	21
8-57H Golden Hawk	DR	1107650	150	OT	435	5.8	14.0	75	11.0	5000	Tik	BF	9	133	.375	DR	1115096		3.80	DR	1110864	0°-300	12.0°-1125	0°-5.0	8.0°-11.0	.016	31	21

ABBREVIATIONS

1—Place selector lever in neutral or park and lift with auto. trans.
2—176 with auto. trans.
3—Push neutral transmission push button to "extreme in" position with auto. trans.
4—MDL-6004 with auto. trans.
5—Same as D-66, D-67, D-70 and D-72 with auto. trans.
6—Same as D-67-2 with power package.
7—IBP-4003-A with power package.
8—0°-350 with power package.
9—11.0°-950 with power package.
10—0°-7.2 with power package.
11—9.5°-14.0 with power package.
12—148 with auto. trans.
13—Press "N/S" key on dashboard with auto. trans.
14—152 with auto. trans.
15—To be used in series with resistance unit 1931614.
16—1107660 with auto. trans.
17—.344 with auto. trans.
18—1115107 with fuel injection.
19—1110889 with fuel injection.
20—.450 with auto. trans.
21—1107651 with auto. trans.
22—1115096 on Silver Hawk.
AL—Auto-Lite.
BF—Bendix-Folo-Taru type.
BT—Bendix type.
CW—Completely warmed engine.
Dap—Depress accelerator pedal.
DR—Delco-Remy.
F—Degrees fahrenheit.
F-E—Ford or Essex Wire.
F-H—Ford or Holley. Fo—Ford.
HOC—Helical spline sliding gear and over-running clutch.
Hol—Holley.
IFT—Inertia follow through drive.
Luc—Lucas.
N—No or none. NA—Not available.
NR—Lock test not recommended.
OT—Operating temperature.
Pbd—Pull button on dash.
PSS—Positive shift solenoid.
Pth—Push neutral transmission button to "extreme in" position.
RT—Room temperature.
SA—Solenoid actuated.
SGO—Sliding gear and over-running clutch.
SOC—Solenoid with over-running clutch.
SS—Solenoid shift, positive engagement
SSC—Spiral spline and over-running clutch.
Tik—Turn ignition key to extreme clockwise position.

For Directory of Car Manufacturers listed above, see Table of Contents

IGNITION TIMING, SPARK PLUGS, AND CLUTCHES

PASSENGER CAR MAKE AND MODEL	IGNITION TIMING		SPARK PLUGS				CYLINDER NUMBERING SYSTEM AND FIRING ORDER	SUPPRESSION TYPE	CLUTCH (PEDAL OPERATED)														
													Facing							Release Bearing		Torsional Dampening	
	C/s deg. @ RPM	Mark Location	Make and Model	Thread (mm)	Tightening Torque (ft. lb.)	Gap			Make	Semi-centrifugal	Type Pressure Plate Springs	Total Plate Pressure	Material	Inside Diam. (In.)	Outside Diam. (In.)	Effective Area (Sq. in.)	Thickness (In.)	Number Required	Engagement Cushioning Method	Type	Method of Lubrication	Method	Friction Material
AMERICAN MOTORS CORP.																							
Hudson 8-35790	5B	VD	AL-AL-7-J[1]	14	30	.035	1L,8R,4R,3L,6R,5L,7L,2R	Dis	BB	N	Co	1600		6.5	10.5	106.8	.125	2	CFS	Ba	PL	Spr	SS
Metropolitan 4-561, 562	11B	CP	Ch-N-8-B	14	30	.024	1,3,4,2	Gen	BB	N	Co	1020	Mo	5.8	8.0	45.0	.125	2	CFS	CR	N	Spr	SS
Nash 8-5790	5B	VD	AL-AL-7-J[1]	14	30	.035	1L,8R,4R,3L,6R,5L,7L,2R	Dis	BB	N	Co	1600		6.5	10.5	106.8	.125	2	CFS	Ba	PL	Spr	SS
Rambler 8-5710	TC	VD	AL-AL-7-J[1]	14	30	.035	1,5,3,6,2,4	Co	BB	N	Co	1300		5.1	8.5	72.2	.135	2	CFS	Ba	PL	Spr	SS
8-5720	5B	VD	AL-AL-7-J[1]	14	30	.035	1L,8R,4R,3L,6R,5L,7L,2R	Dis	BB	N	Co	1300		7.0	10.0	80.1	.125	2	CFS	Ba	PL	Spr	SS
CHRYSLER CORP.																							
Chrysler 8-C-75-1	6B-500	VD	AL-AR-42	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	BB	N	Co	2013	MWA	6.0	10 0	100 5	.125	2	CFS	Ba	S	CS	.....
8-C-75-2	6B-500	VD	AL-AR-42	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8-C-76	6B-500	VD	AL-AGR-42	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8-C-76-300		VD		14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	BB	N	Co	2349	MWA	6 5	11 0	123.4	.125	2	CFS	Ba	S	CS	.....
De Soto 8-S-27	6B-500	FDP	AL-AR-42	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	BB	N	Co	2013	MWA	6 0	10 0	100 5	.125	2	CFS	Ba	S	CS	.....
8-S-25	6B-500	VD	AL-AR-42	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	BB	N	Co	2013	MWA	6.0	10 0	100.5	.125	2	CFS	Ba	S	CS	.....
8-S-26	6B-500	VD	AL-AR-42	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dodge 6-D-72	TC-500	VD	AL-AR-51	14	31	.035	1,5,3,6,2,4	SP,Dis	BB[2]	N	Co	1206[3]	MWA	6.0	9.3	77.8	.125[4]	2	CFS	Ba	S	CS	.....
8-D-66, D-67, D-70, D-71	6B-500	FDP	AL-AR-42	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	BB	N	Co	2013	MWA	6.0	10.0	100.5	.125	2	CFS	Ba	S	CS	.....
Imperial 8-1M1	6B-500	VD	AL-AGR-42	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth 6-P-30	TC-500	VD[6]	AL-AR-51	14	31	.035	1,5,3,6,2,4	SP,Dis	BB[7]	N	Co	1206[3]	MWA	6.0	9.3	77.8	.125[4]	2	CFS	Ba	S	CS	.....
8-P-31-1	4B-500	FDP	AL-AR-52	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	BB	N	Co	1694	MWA	6 8	10 0	85.5	.125	2	CFS	Ba	S	CS	.....
8-P-31-2, P-31-3	6B-500[5]	FDP	AL-AR-52	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	BB	N	Co	1694	MWA	6.8	10 0	85.5	.125	2	CFS	Ba	S	CS	.....
8-P-31 Fury	6B-500	VD	AL-AR-32	14	31	.035	1L,8R,4R,3L,6R,5L,7L,2R	SP,Dis	BB	N	Co	1895	MWA	6.5	10 5	106.8	.125	2	CFS	Ba	S	CS	.....
FORD MOTOR CO.																							
Continental 8-60A	5B-400	VD	Ch-860	18	25	.034	1R,5L,4R,8L,6L,3R,7L,2R	Dis,Gen,OG,FG,VR,W	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ford 8-57A, 57B, 58A, 58B, 73A, 73B	4B[8]	VD	Ch-870	18	25	.034	1,5,3,6,2,4	.....	Lg	Y	Co	1230	WA	6.0	9 5	85.2	.125	2	TDS	Ba	PL	Spr	St
8-57A, 57B, 58A, 58B, 73A, 73B	3B[8]	VD	Ch-870	18	25	.034	1R,5L,4R,8L,6L,3R,7L,2R	.....	Lg	Y	Co	1395	WA	6.8	10 0	85.5	.125	2	TDS	Ba	PL	Spr	St
8-40A, 40B	3B[8]	VD	Ch-870	18	25	.034	1R,5L,4R,8L,6L,3R,7L,2R	.....	Lg	Y	St	1395	MA	7.0	11 0	113.1	.125	2	TDS	Ba	PL	Spr	St
Lincoln 8-57A, 57B, 58A, 58B, 60A, 60B, 76B	5B	VD	Ch-860	18	25	.034	1R,5L,4R,8L,6L,3R,7L,2R	.....	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mercury 8-57A, 57B, 58A, 58B	3B[9]	VD	Ch-860	18	25	.034	1R,5L,4R,8L,6L,3R,7L,2R	.....	BB	N	SpS	1840	WA	6.5	10.5	106.8	.125	2	BD	Ba	PL	Spr	.....
8-75A	6B	VD	Ch-860	18	25	.034	1R,5L,4R,8L,6L,3R,7L,2R	.....	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
GENERAL MOTORS CORP.																							
Buick 8-40	5B	HB	AC-44	14	25	.033	1R,2L,7R,8L,4L,5R,6L,3R	HT,Co,Gen,VR	Lg	Y	Co	1845	Wo	7.0	11.0	113.0	.125	2	Spr	Ba	S	Spr	Wo
8-50, 60, 70	5B	HB	AC-44	14	25	.033	1R,2L,7R,8L,4L,5R,6L,3R	HT,Co,Gen,VR	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cadillac 8-60, 62, 75	5B-400	CB	AC-44	14	22	.035	1L,8R,4R,3L,6R,5L,7L,2R	Dis,Gen,Co,VR	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chevrolet 6-1500, 2100, 2400	TC-475	Fly	AC-44	14	20	.036	1,5,3,6,2,4	HT	Chev	N	Dia	1425[10]	MWA	6.0[11]	9 5[12]	85 2[13]	.125	2	Spr	Ba	S	Spr	N
8 (265 cu. in.) 1500, 2100, 2400	4B-475	VD	AC-44	14	23	.036	1L,8R,4R,3L,6R,5L,7L,2R	HT	Chev	N	Dia	1550[15]	MWA	6.0[11]	10 0[12]	100 5[13]	.125	2	Spr	Ba	S	Spr	N
8 (283 cu. in.) 1500, 2100, 2400	4B-475	VD	AC-44	14	23	.036	1L,8R,4R,3L,6R,5L,7L,2R	HT	BB[14]	Y	Co	1610	WA	6 5	10 0	90 7	.135	2	Spr	Ba	S	Spr	N
8-2934	4B-475[16]	VD	AC-44	14	23	.036	1L,8R,4R,3L,6R,5L,7L,2R	HT	BB	Y	Co	1610	WA	6 5	10.0	90 7	.135	2	Spr	Ba	S	Spr	N
Oldsmobile 8-88, Super 88	5B-850	CP	AC-44	14	26	.030	1L,8R,7L,3L,6R,5L,4R,2R	HT	Lg	Y	Cm	1640	WM	7.0	11.0	58 5	.137	2	Spr	Ba	F	Spr	St
8-98	5B-850	CP	AC-44	14	26	.030	1L,8R,7L,3L,6R,5L,4R,2R	HT	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pontiac 8-57-27, 57-28	6B-450	HBP	AC-45	14	25	.036	1L,8R,4R,3L,6R,5L,7L,2R	HT,W,Gen,VR	BB[17]	N	Co	1935	WMA	7.0	10.5	96.2	.125	2	Spr	Ba	S	CF	SS
STUDEBAKER-PACKARD CORP.																							
Packard 8-57L	4B-600	VD	Ch-H-10	14	28	.036	1L,8R,4R,3L,6R,5L,7L,2R	Co,Gen,VR,Dis	BB	N	Co	2054	MA	6.5	10 5	107.0	.125	2	Spr	Ba	PL	CS	SW
Studebaker 6-57G	2B-550	VD	Ch-J-7	14	25	.031	1,5,3,6,2,4	Co,Gen,VR,Dis	BB	N	Co	1170	MA	6.1	9 1	72.0	.125	2	Spr	Ba	PL	CS	SW
8-57B	4B	VD	Ch-H-11	14	28	.036	1L,8R,4R,3L,6R,5L,7L,2R	Co,Gen,VR,Dis	BB	N	Co	1594	MA	6.0	10 0	100.0	.125	2	Spr	Ba	PL	CS	SW
8-57H	4B	VD	Ch-H-11	14	26	.036	1L,8R,4R,3L,6R,5L,7L,2R	Co,Gen,VR,Dis	BB	N	Co	1734	MA	6.5	10 3	99.0	.125	2	Spr	Ba	PL	CS	SW
8-57H Golden Hawk	4B	VD	Ch-H-10	14	28	.036	1L,8R,4R,3L,6R,5L,7L,2R	Co,Gen,VR,Dis	BB	N	Co	2054	MA	6.5	10 5	107.0	.125	2	Spr	Ba	PL	CS	SW

ABBREVIATIONS

1—Or Champion H-10-64-D.
2—Auburn optional.
3—1280 with Auburn.
4—.114 with Auburn.
5—4B-500 with power package.
6—Fan drive pulley on P-30-1.
7—Auburn optional when overdrive is not used.
8—6B with auto. trans.
9—5B with auto. trans.
10—1600 optional.
11—6.5 optional.
12—11.0 optional.
13—123.7 optional.
14—Used with one or two four barrel carburetors or fuel injection only.
15—1700 optional.
16—12B-475 with two four barrel carburetors and optional camshaft or fuel injection and optional camshaft.
17—Long driven member.

AC—A.C. Spark Plug Div.
AL—Auto-Lite.
B—Before top center.
Ba—Ball.
BB—Borg and Beck.
BD—Borglite disc with vibrations damper.
CB—Crankshaft balancer.
CF—Coil springs and friction.
CFS—Crimped flat springs.
Ch—Champion. **Cm**—Compression.
Chev—Chevrolet. **Co**—Coil.
CP—Crankshaft pulley.
CR—Carbon ring. **Dia**—Diaphragm.
CS—Coil springs. **Dis**—Distributor.
F—Grease fitting.
FDP—Fan drive pulley.
FG—Fuel gauge.
Fly—Flywheel.
Gen—Generator.
HB—Harmonic balancer.
HBP—Harmonic balancer pulley.
HT—High tension cables.
L—Left bank.
Lg—Long Mfg.
MA—Moulded asbestos.
Mo—Moulded.
MWA—Moulded woven asbestos.
N—No or none.
OG—Oil gauge.
PL—Pre-lubricated.
R—Right bank.
S—Sealed.
SP—Spark plugs.
SpS—Spring steel.
Spr—Springs.
SS—Steel on steel.
St—Steel.
SW—Steel washers.
TC—Top center.
TDS—Torbend disc with spring vibration damper.
VD—Vibration dampener.
VR—Voltage regulator.
W—Wheels.
WA—Woven asbestos.
WM—Woven moulded.
Wo—Woven.
Y—Yes.

LAMP BULBS, FUSES AND CIRCUIT BREAKERS

PASSENGER CAR MAKE AND MODEL	LAMP BULBS (Trade Number)															FUSES AND CIRCUIT BREAKERS (Trade Number)												
						Direction Indicator																							
	Headlamp	Headlamp Beam Indicator	Parking Light	Tail Light	Stop Light	Front	Rear	Tail/Tale	License Plate Light	Instrument Light	Ignition Lock Light	Dome Light	Clock Light	Courtesy Light	Trunk Compartment Light	Headlamp	Headlamp Beam Indicator	Parking Light	Tail Light	Stop Light	Direction Indicator	License Plate Light	Instrument Light	Ignition Light	Dome Light	Clock	Clock Light	Courtesy Light	Trunk Compartment Light
AMERICAN MOTORS CORP.																												
Hudson 8-3578D	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	N	89	57	(4)	N	18CB	(5)	12CB	(2)	30CB	(3)	(3)	(2)	N	SFE7½	N	(2)	N	N
Metropolitan 4-561, 562	4430	1447	1016	1016	(1)	(2)	1141	1432	57	1447	N	N	N	N	N	3AG30	(5)	(5)	(5)	3AG30	(3)	(5)	(5)	N	N	N	N	N	N
Nash 8-5780	4002[6]	57	1034	1034	(1)	(2)	(3)	57	57	57	N	89	(7)	(4)	N	18CB	(5)	12CB	(2)	30CB	(3)	(2)	(2)	N	SFE7½	N	(2)	N	N
Rambler 6-5710, 8-5720	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	N	89	57	(4)	N	12CB	(5)	12CB	(2)	30CB	(3)	(2)	(2)	N	SFE7½	N	(2)	N	N
CHRYSLER CORP.																												
Chrysler 8-C-75, C-76, C-76-300	5400[8]	57	1034	1034	(1)	(2)	(3)	57	67	57	57	1004	57	1004	1003	20CB	(5)	6CB	(2)	6CB	N	(2)	(2)	(2)	(3)	N	(2)	(3)	(3)
De Soto 8-S-27	5400	57	1034	67	1073	(2)	(3)	57	67	57	N	1004	57	1004	1003	20CB	(5)	6CB	(2)	6CB	N	(2)	(2)	N	(3)	SFE2	(2)	(3)	(3)
8-S-25, S-26	5400[8]	57	1034	67	1073	(2)	(3)	57	67	57	N	1004	57	1004	1003	20CB	(5)	6CB	(2)	6CB	N	(2)	(2)	N	(3)	SFE2	(2)	(3)	(3)
Dodge 8-D66, D67, D70, D71, D72	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	N	1004	57	1004	N	20CB	(5)	(5)	15CB	(1)	N	(1)	(1)	(5)	(1)	SFE2	(1)	(1)	N
Imperial 8-1M1-1	5400[8]	57	1034	1034	(1)	(2)	(3)	57	67	67	57	1004	57	1004	1003	20CB	(5)	6CB	(2)	6CB	N	(2)	(2)	(2)	(3)	N	(2)	(3)	(3)
8-1M1-2, 1M1-4	4001[9]	57	1034	1034	(1)	(2)	(3)	57	67	67	57	1004	57	1004	1003	20CB	(5)	6CB	(2)	6CB	N	(2)	(2)	(2)	(3)	N	(2)	(3)	(3)
Plymouth 6-P-30, 8-P-31, P-31 Fury	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	N	1004	N	N	1003	20CB	(5)	(5)	15CB	(1)	N	(1)	(1)	N	(1)	SFE2	(1)	(1)	(1)
FORD MOTOR CO.																												
Continental 8-60A	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	(7)	1003	(7)	89	68	12CB	(5)	12CB	(2)	(2)	SFE7½	(2)	(2)	(7)	SFE7½	AG1	(7)	(4)	(2)
Ford 6, 8-57A, B; 58A, B; 73A, B	5400	1445	1034	1034	(1)	(2)	(3)	.....	67	57[10]	.....	1003	57	67	N	12CB	(5)	12CB	(2)	(2)	7½CB	(2)	(2)	(2)	(11)	1CB	(2)	(11)	(2)
8-40A, 40B	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	57	N	57	57	N	12CB	(5)	12CB	(2)	(2)	SFE7½	(2)	(2)	(2)	N	N	(2)	SFE7½	N
Lincoln 8-57A, B; 58A, B; 60A, B; 76B	5400	57	67	1034	(1)	1034	(3)	53	67	57	.....	1003	(7)	89	57	12CB	(5)	12CB	(2)	(2)	SFE7½	(2)	(2)	(2)	(11)	N	(2)	(11)	(2)
Mercury 8-57A, 57B, 58A, 58B	5400	1445	1034	1034	(1)	(2)	(3)	.....	67	57	57	1003	57	89	89	12CB	(5)	12CB	(2)	(2)	SFE7½	(2)	(2)	(2)	SFE7½	1AG1	(2)	(4)	(2)
8-75A	4002[6]	1445	1034	1034	(1)	(2)	(3)	.....	67	57	57	1003	57	89	89	12CB	(5)	12CB	(2)	(2)	SFE7½	(2)	(2)	(2)	SFE7½	1AG1	(2)	(4)	(2)
GENERAL MOTORS CORP.																												
Buick 8-40, 50, 60, 70	5400	53	1034	67	1073	(2)	(3)	53	67	57	53	1004[12]	57	N	89	22CB	(5)	(5)	(5)	10AGC	(3)	(5)	(5)	(5)	SFE20	2AGA	(5)	N	(4)
Cadillac 8-60, 62, 75	5400	53	67	1034	(1)	1074	(3)	57	67	57	53	1004[13]	53	90	89	20CB	(5)	(5)	(5)	(5)	SFE6	(5)	(5)	(5)	AGC25	(4)	(5)	(5)	(4)
Chevrolet 6, 8-1500, 2100, 2400	5400	53	1034	1034	(1)	(2)	(3)	57	67	57	N	1004	57	89	53	13CB	N	(5)	SFE9	(1)	SFE6	(1)	AGA3	N	(1)	(1)	AGA3	(7)	(1)
8-2934	5400	53	1034	1034	(1)	(2)	(3)	N	67	57	53	N	57	90	N	13CB	(5)	(5)	(5)	(5)	(5)	(14)	(15)	N	(5)	(15)	(5)	N
Oldsmobile 8-88, Super 88	.....	53	1034	1034	(1)	(2)	(3)	57	67	57	53	1004	57	90	88	25CB	(5)	(5)	SFE9	AGC20	SFE9	SFE9	AGA3	SFE3	AGC20	AGA1	AGA3	AGC20	SFE9
8-98	.....	53	1034	1034	(1)	(2)	(3)	57	67	57	53	90	57	90	89	25CB	(5)	(5)	SFE9	AGC20	SFE9	SFE9	AGA3	SFE3	AGC20	AGA1	AGA3	AGC20	SFE9
Pontiac 8-57-27, 57-28	.....	57	1034	1034	(1)	(2)	(3)	57	67	57	53	1004	57	89	1003	22CB	(5)	(5)	.....	.....	.....	(1)	SFE4	(7)	.....	.....	(7)	(4)	(4)
STUDEBAKER-PACKARD CORP.																												
Packard 8-57L	5400	1445	1034	1034	(1)	(2)	(3)	1445	67	57	.....	1004	57	90	67	18CB	(5)	(5)	(5)	AGC15	AGC15	(5)	(5)	.....	(3)	1AG3	(5)	(3)	(5)
Studebaker 6-57G, 8-57B, 57H	5400	1445	1034	1034	(1)	(2)	(3)	53	67	57	.....	1004	57	.....	1003	18CB	(5)	(5)	(5)	AGC15	AGC15	(5)	(5)	.....	(3)	1AG3	(5)	.....	(5)

ABBREVIATIONS

1—On tail light.
2—On parking light.
3—On stop light.
4—On dome light.
5—On head lamp.
6—Upper only; lower, 4001.
7—On instrument light.
8—Four head lamps optional; 2-4001 and 2-4002 lamps.
9—Upper only; lower, 4002; dual headlights optional.
10—For speedometer only; oil and generator warning lamps, 1445.
11—On direction indicator.
12—Or 90.
13—90 on Imperial sedan, Series 60 and 62 sedan, Coupe DeVille and Eldorado coupe.
14—On head lamp plus AGA 3 fuse.
15—On fused section of instrument light.
CB—Circuit breaker.
N—No or none.

For Directory of Car Manufacturers listed above, see Table of Contents

TRANSMISSIONS—Conventional and Conventional with Overdrive

PASSENGER CAR MAKE AND MODEL	TYPE			CONVENTIONAL TRANSMISSION														OVERDRIVE												
					Ratios								Lubricant												Lubricant					
															SAE Viscosity Number											SAE Viscosity Number		
	Conventional	Conventional with O.D.	Automatic	No. of Forward Speeds	First	Second	Third	Reverse	Constant Mesh Gears in 2nd	Spur Gear Used In	Helical Gears Used In	Synchronous Meshing in 2nd and 3rd Gears	Capacity (pt.)	Type Recommended	Summer	Winter	Extreme Cold	Type	No. of Planetary—No. of Pinions	Manual Lockout	Downshift Accelerator Control	Minimum Cut-in Speed (mph)	Gear Ratio (to—1)	Capacity (pt.)	Separate Filter	Type Recommended	Summer	Winter	Extreme Cold
AMERICAN MOTORS CORP.																														
Hudson S-35/50	Std	Opt	Opt	3	2.49	1.59	1.00	3.15	Y	N	1,2,R	Y	4	SM	90	80	80	P	3	Y	Y	25	.722	4		SM	90	80	80
Metropolitan 4-561, 562	Std	N	N	3	2.84	1.49	1.00	3.38	Y	R	1,2	Y	5½	MG	40	30	20	N												
Nash S-5700	Std	Opt	Opt	3	2.49	1.59	1.00	3.15	Y	N	1,2,R	Y	4	SM	90	80	80	P	3	Y	Y	25	.722	4		SM	90	80	80
Rambler 6-5710	Std	Opt	Opt	3	2.61	1.63	1.00	3.54	Y	N	1,2,R	Y	2¼	SM	90	80	80	P	3	Y	Y	25	.700	3½		SM	90	80	80
S-5720	Std	Opt	Opt	3	2.57	1.55	1.00	3.49	Y	N	1,2,R	Y	4	SM	90	80	80	P	3	Y	Y	25	.700	4		SM	90	80	80
CHRYSLER CORP.																														
Chrysler S-C-75-1	Std	N	Opt	3	2.31	1.55	1.00	2.96	Y	N	AS	Y	2¾	FG	80	80	80	N												
S-C-75-2, C-76	N	N	Std	N														N												
S-C-76-300	Opt	N	Std	3	2.31	1.55	1.00	2.96	Y	N	AS	Y	2¾	FG	80	80	80	N												
De Soto S-S-25, S-27	Std	N	Opt	3	2.31	1.55	1.00	2.96	Y	N	AS	Y	2¾	MP	80	80	80	N												
S-S-26	N	N	Std	N														N												
Dodge D-D-72	Std	N	Opt	3	2.50	1.68	1.00	3.21	Y	N	AS	Y	2¾	GL	80	80	80	N												
S-D-66, D-67, D-70, D-71	Std	N	Opt	3	2.31	1.55	1.00	2.96	Y	N	AS	Y	2¾	GL	80	80	80	N												
Imperial S-1M1	N	N	Std	N														N												
Plymouth P-P-30	Std	Opt	Opt	3	2.50	1.68	1.00	3.21	Y	N	AS	Y	2¾	GL	80	80	80	P	3	Y	Y	25	.700	¾	N	GL	80	80	80
P-P-31	Std	Opt	Opt	3	2.50	1.68	1.00	3.21	Y	N	AS	Y	2¾	GL	80	80	80	P	3	Y	Y	25	.700	¾	N	GL	80	80	80
P-P-31 Fury	Std	N	Opt	3	2.50	1.68	1.00	3.21	Y	N	AS	Y	2¾	GL	80	80	80	N												
FORD MOTOR CO.																														
Continental S-60A	N	N	Std	N														N												
Ford S-57A, 57B, 58A, 58B, 73A, 73B	Std	Opt	Opt	3	2.84	1.61	1.00	3.37	Y	N	AS	Y	3¼	ME	80	80	80	P	3	Y	Y	28	.700	NA	N	ME	80	80	80
S-73A, 73B	Std	Opt	Opt	3	2.61	1.62	1.00	3.10	Y	N	AS	Y	3¼	ME	80	80	80	P	3	Y	Y	28	.700	NA	N	ME	80	80	80
S-57A, 57B, 58A, 58B	Std	Opt	Opt	3	2.40	1.49	1.00	2.86	Y	N	AS	Y	3¼	ME	80	80	80	P	3	Y	Y	28	.700	NA	N	ME	80	80	80
S-40A, 40B	Std	Opt	Opt	3	2.40	1.49	1.00	2.86	Y	N	AS	Y	3¼	MP	90	90		P	3	Y	Y	28	.720	NA	N	MP	90	90	
Lincoln S-57A,57B,58A,58B,60A,60B,76B	N	N	Std	N														N												
Mercury S-57A, 58A	Std	Opt	Opt	3	2.49	1.59	1.00	3.15	Y	N	AS	Y	3¼		80	80	80	P	3	N	Y	28	.780		N		80	80	80
S-58A, 58B, 75A	N	N	Std	N														N												
GENERAL MOTORS CORP.																														
Buick S-40	Std	N	Opt	3	2.15	1.37	1.00	2.28	Y	N	AS	Y	2½	MP	90	90	90	N												
S-50, 60, 70	N	N	Std	N														N												
Cadillac S-60, 62, 75	N	N	Std	N														N												
Chevrolet 6-1500, 2100, 2400	Std	Opt	Opt	3	2.94	1.68	1.00	2.94	Y	N	AS	Y	2	MO	90	90	80	P	3	Y	Y	27	.700	1	N	MO	90	90	80
8-(265 cu. in.) 1500, 2100, 2400	Std	Opt	N	3	2.94	1.68	1.00	2.94	Y	N	AS	Y	2	MO	90	90	80	P	3	Y	Y	27	.700	1	N	MO	90	90	80
8-(283 cu. in.) 1500, 2100, 2400	Opt	Opt[1]	Std[2]	3	2.94[3]	1.68[4]	1.00	2.94[3]	Y	N	AS	Y	2	MO	90	90	80	P	3	Y	Y	27	.700	1	N	MO	90	90	80
S-2934	Std	N	Opt	3[5]	2.21[3]	1.32[6]	1.00[7]	2.21[8]	Y	N	AS	Y	2	MO	90	90	80	P	N											
Oldsmobile S-88, Super 88	Std	N	Opt	3	2.15	1.37	1.00	2.28	Y	N	AS	Y	2½	MP	80	80	80	N	N											
S-98	N	N	Std	N														N	N											
Pontiac S-57-27, 57-28	Std	N	Opt	3	2.15	1.37	1.00	2.28	Y	N	AS	Y	2½	EP	80	80	80	N												
STUDEBAKER-PACKARD CORP.																														
Packard S-57L	N	Std	Opt	3	2.49	1.59	1.00	3.15	Y	N	AS	Y	3 1/10	MO	90	90	90	P	4	Y	Y	25	.722	1 1/10	N	MO	90	90	90
Studebaker 6-57G	Std	Opt	Opt	3	2.61	1.63	1.00	3.54	Y	N	AS	Y	1 1/10	MO	90	90	90	P	3	Y	Y	25	.700	1 1/10	N	MO	90	90	90
S-57B, 57H	Std	Opt	Opt	3	2.57	1.55	1.00	3.48	Y	N	AS	Y	2 1/10	MO	90	90	90	P	3	Y	Y	25	.700	1	N	MO	90	90	90
S-57H Golden Hawk	N	Std	Opt	3	2.49	1.59	1.00	3.15	Y	N	AS	Y	3 1/10	MO	90	90	90	P	4	Y	Y	25	.722	1 1/10	N	MO	90	90	90

ABBREVIATIONS

1—Not available with two four barrel carburetors or fuel injection.
2—Powerglide only; Turboglide optional.
3—2.20 optional.
4—1.30 optional.
5—Four speed optional.
6—1.66 optional.
7—1.31 optional.
8—2.25 optional.
AS—All speeds.
EP—Extreme pressure.
FG—Fluid gear lubricant.
GL—Gear lubricant.
ME—Mild extreme pressure.
MG—Mineral gear oil.
MO—Mineral oil.
MP—Multi-purpose gear lubricant.
N—No or none.
NA—Not available.
Opt—Optional at extra cost.
P—Planetary.
R—Reverse.
SM—Straight mineral.
Std—Standard.
Y—Yes.

AUTOMATIC TRANSMISSIONS

PASSENGER CARS MAKE AND MODEL	TRADE NAME	Type	Manual Selector Positions (left to right)	GEAR RATIOS: 1st or Low Range	2nd or Drive Range	3rd or Intermediate Range	4th Speed	Reverse	Shifting Within Drive Range by Accelerator and Governor	Governor-Forced Shift	Downshift Up to (mph)	TORQUE CONVERTER: Number of Elements	Max. Ratio at Stall at Engine RPM	Mechanical Lockup: Provided	Mechanical Lockup: Speed Range (mph)	Mechanical Lockup: Releases at (mph)	Type of Cooling	Anti-Creep Device	LUBRICATION: Capacity—Refill (pt.)	Type Recommended	Grade (S A E. No.): Summer	Grade (S A E. No.): Winter	Grade (S A E. No.): Extreme Cold
AMERICAN MOTORS CORP.																							
Hudson 8-35780	Hydramatic	FCG	P,N,D4,D3,L,R	3.97	2.55	1.55	1.00	4.31	Y	Y	65	No							23	A	A	A	A
Metropolitan 4-561, 562	None																						
Nash 8-5780	Hydramatic	FCG	P,N,D4,D3,L,R	3.97	2.55	1.55	1.00	4.31	Y	Y	65	No							23	A	A	A	A
Rambler 6-5710	Hydramatic	FCG	N,D4,D3,L,R	3.82	2.63	1.45	1.00	4.30	Y	Y	58	No							17	A	A	A	A
8-5720	Hydramatic	FCG	P,N,D4,D3,L,R	3.97	2.55	1.55	1.00	4.31	Y	Y	65	No							23	A	A	A	A
CHRYSLER CORP.																							
Chrysler 8-C-75-1	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	65	3	2.60-1770	No			AC	No	18	A	A	A	A
8-C-75-2	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	65	3	2.60-1770	No			WC	No	18	A	A	A	A
8-C-76	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	65	3	2.30-1975	No			WC	No	21	A	A	A	A
8-C-76-300	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	65	3	2.30-1950	No			WC	No	21	A	A	A	A
De Soto 8-S-27	Power Flite[2]	TCG	R,N,L,D	1.72[1]	1.00[1]			2.39[1]	Y	Y	55	3	2.70-1860[3]	No			AC	No	20	A	A	A	A
8-S-25, S-26	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	60	3	2.70-1975	No			AC	No	18	A	A	A	A
Dodge 6-D-72	Power Flite	TCG	R,N,L,D	1.72[1]	1.00[1]			2.39[1]	Y	Y	55	3	2.60-1330	No			AC	No	20	A	A	A	A
8-D-66	Power Flite[2]	TCG	R,N,L,D	1.72[1]	1.00[1]			2.39[1]	Y	Y	55	3	2.60-1860[4]	No			AC	No	20	A	A	A	A
8-D-67-1	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	55	3	2.60-1860[4]	No			AC	No	18	A	A	A	A
8-D-67-2	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	55	3	2.70-1870	No			AC	No	18	A	A	A	A
8-D-70, D-71	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	55	3	2.70-1860[4]	No			AC	No	18	A	A	A	A
Imperial 8-1M1	Torque Flite	TCG	1,2,D,R,N	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	65	3	2.30-1975	No			WC	No	21	A	A	A	A
Plymouth 6-P-30	Power Flite	TCG	R,N,L,D	1.72[1]	1.00[1]			2.39[1]	Y	Y	55	3	2.60-1330	No			AC	No	20	A	A	A	A
8-P-31-1, P-31-2	Power Flite	TCG	R,N,L,D	1.72[1]	1.00[1]			2.39[1]	Y	Y	55	3	2.70-1745	No			AC	No	20	A	A	A	A
8-P-31-3	Power Flite[2]	TCG	R,N,L,D	1.72[1]	1.00[1]			2.39[1]	Y	Y	55	3	2.70-1745	No			AC	No	20	A	A	A	A
8-P-31 Fury	Torque Flite	TCG	R,1,N,2,D	2.45[1]	1.45[1]	1.00[1]		2.20[1]	Y	Y	NA	3	NA	No			AC	No	18	A	A	A	A
FORD MOTOR CO.																							
Continental 8-60A	Turbodrive	TCG	P,R,N,D,L	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	74	3	2.10-1920	No			AC	No	23	A	A	A	A
Ford 6-57A, 57B, 58A, 58B, 73A, 73B	Fordomatic	TCG	P,R,N,Dr,Lo	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	62	3	-1580	No			AC	No	21½	A	A	A	A
8-57A, 57B, 58A, 58B, 73A, 73B	Fordomatic	TCG	P,R,N,Dr,Lo	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	62	3	-1710	No			WC	No	21½	A	A	A	A
8-40A, 40B	Fordomatic	TCG	P,R,N,Dr,Lo	2.40[1]	1.46[1]	1.00[1]		2.00[1]	Y	Y	67	3	2.10-1710	No			WC	No	21½	A	A	A	A
Lincoln 8-57A, 57B, 58A, 58B, 60A, 60B, 76B	Turbodrive	TCG	P,R,N,Dr,Lo	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	74	3	2.10-1920	No			AC	No	22⅝	A	A	A	A
Mercury 8-57A, 57B, 58A, 58B, 75A	Mercomatic	TCG	R,N/S,L,Dr,Park	2.40[1]	1.46[1]	1.00[1]		2.00[1]	Y	Y	69	3	-1710	No			WC	No	21	A	A	A	A
GENERAL MOTORS CORP.																							
Buick 8-40	Dynaflow	TCG	P,N,D,L,R	1.82[1]	1.00[1]			1.82[1]	Y	No	40	5	3.10-1500	No			WC	No	22	A	A	A	A
8-50, 60, 70	Dynaflow	TCG	P,N,D,L,R	1.82[1]	1.00[1]			1.82[1]	Y	No	40	5	3.10-1700	No			WC	No	22	A	A	A	A
Cadillac 8-60, 62, 75	Hydramatic	FCG	P,N,Dr1,Dr2,Lo,R	3.97	2.55	1.55	1.00	3.74	Y	Y	70	No						No	22	A	A	A	A
Chevrolet 6, 8-1500, 2100, 2400, 8-2934	Powerglide	TCG	P,N,D,L,R	3.82[1]	1.82[1]	1.00[1]		1.82[1]	Y	Y	50	3	2.10-	No				No	22	A	A	A	A
8-1500, 2100, 2400	Turboglide	TCG	P,R,N,D,HR	4.30[1]	3.80[1]	1.00[1]		3.00[1]	No	No	No	5	4.30-	No			WC	No	19	A	A	A	A
Oldsmobile 8-88, Super 88, 98	Hydramatic	FCG	P,N,Dr,S,Lo,R	3.97	2.55	1.55	1.00	4.31	Y	Y	65	No							22	A	A	A	A
Pontiac 8-57-27	Hydramatic	FCG	P,N,Dr1,Dr2,Lo,R	3.97	2.55	1.55	1.00	3.74	Y	Y	70	No							18⅛	A	A	A	A
8-57-28	Hydramatic	FCG	P,N,Dr1,Dr2,Lo,R	3.97	2.55	1.55	1.00	3.74	Y	Y	65	No							18⅛	A	A	A	A
STUDEBAKER-PACKARD CORP.																							
Packard 8-57L	Flightomatic	TCG	P,N,D,L,R	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	60	3	2.15-1825	No			AC	No	19	A	A	A	A
Studebaker 8-57G	Flightomatic	TCG	P,N,D,L,R	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	60	3	2.15-1500	No			AC	No	18	A	A	A	A
8-57B	Flightomatic	TCG	P,N,D,L,R	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	60	3	2.15-1600	No			AC	No	18	A	A	A	A
8-57H	Flightomatic	TCG	P,N,D,L,R	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	60	3	2.15-1800	No			AC	No	18	A	A	A	A
8-57H Golden Hawk	Flightomatic	TCG	P,N,D,L,R	2.40[1]	1.47[1]	1.00[1]		2.00[1]	Y	Y	60	3	2.15-1825	No			AC	No	18	A	A	A	A

ABBREVIATIONS

1—Plus torque converter.
2—Torque Flite optional.
3—2.70-1845 with four barrel carburetor and dual exhaust.
4—2.70-1870 with power package.
A—Automatic transmission fluid, type "A."
AC—Air cooled.
D or **Dr**—Drive.
FCG—Fluid coupling with gears.
HR—Hill retarder.
L or **LO**—Low.
N—Neutral.
NA—Not available.
N/S—Neutral and start.
P—Park.
R—Reverse.
S—Super performance.
TCG—Torque converter with gears.
WC—Water cooled.
Y—Yes.

For Directory of Car Manufacturers listed above, see Table of Contents

PROPELLER SHAFT, AND REAR AXLE

PASSENGER CAR MAKE AND MODEL	PROPELLER SHAFT										REAR AXLE														
			Intermediate Bearing		Universals								Gearing								Lubricant				
								Bearing					Standard Ratios			No. of Teeth—Ring and Pinion							SAE Viscosity Number		
	Number Used	Type	Type	Lubrication	Make	Number Used	Type	Type	Lubrication	Drive Taken Through	Torque Taken Through	Type	Gear Type	Conventional (to —1)	Overdrive (to —1)	Automatic (to —1)	Conventional	Overdrive	Automatic	Pinion Adjustment	Pinion Bearing Adjustment	Capacity (Pt.)	Type Recommended	Summer	Winter	Extreme Cold
AMERICAN MOTORS CORP.																									
Hudson 8-38780	1	TT	AF	P	Mech	1	Cr	AF	P	TT	TT	SF	Hy	4.10	4.10	3.15	41-10	41-10	41-13	Sh	Sh	4	Hy	90	90	80
Metropolitan 4-561, 562	1	Ex	N	.....	HS	2	Cr	NR	GF	Sp	Sp	TF	Hy	4.22	N	N	38-9	N	N	Sh	Sh	2	EP	90	90	80
Nash 8-5780	1	TT	AF	P	Mech	1	Cr	AF	P	TT	TT	SF	Hy	4.10	4.10	3.15	41-10	41-10	41-13	Sh	Sh	4	Hy	90	90	80
Rambler 6-5710	1	TT	AF[1]	P	Mech	1	Cr	AF	P	TT	TT	SF	Hy	3.77	4.40	3.31	34-9	40-9[2]	43-13	Sh	Sh	3	Hy	90	90	80
6-5720	1	TT	AF	P	Mech,Uni	1	Cr	AF	P	TT	TT	SF	Hy	4.10	4.40	3.54	41-10	40-9	39-11	Sh	Sh	4	Hy	90	90	80
CHRYSLER CORP.																									
Chrysler 8-C-75-1	1	Ex	N	.....	Chry	2	B-C	AF	P	Sp	Sp	SF	Hy	3.73	N	3.18	41-11	N	35-11	SS	Sh	3½	MP	90	90	80
8-C-75-2	1	Ex	N	.....	Chry	2	B-C	AF	P	Sp	Sp	SF	Hy	N	N	3.18	N	N	35-11	SS	Sh	3½	MP	90	90	80
8-C-76	1	Ex	N	.....	Chry	2	B-C	AF	P	Sp	Sp	SF	Hy	N	N	3.18[3]	N	N	35-11[3]	SS	Sh	3½	MP	90	90	80
8-C-76-300	1	Ex	N	.....	Chry	2	B-C	AF	P	Sp	Sp	SF	Hy	Var	N	3.36	Var	N	37-11	SS	Sh	3½	MP	90	90	80
De Soto 8-S-27	1	Ex	N	.....	DeS	2	B-C	AF	P[4]	Sp	Sp	SF	Hy	3.91	N	3.54	43-11	N	39-11	SS	Sh	3½	MP	90	90	80
8-S-25	1	Ex	N	.....	DeS	2	B-C	AF	P	Sp	Sp	SF	Hy	3.91	N	3.36	43-11	N	37-11	SS	Sh	3½	MP	90	90	80
8-S-26	1	Ex	N	.....	DeS	2	B-C	AF	P	Sp	Sp	SF	Hy	N	N	3.36	N	N	37-11	SS	Sh	3½	MP	90	90	80
Dodge 6-D-72	1	Ex	N	.....	Do	2	B-C	AF	P[4]	Sp	Sp	SF	Hy	3.90	N	3.73	39-10	N	41-11	SS	Sh	3¼	MP	90	90	80
8-D-66	1	Ex	N	.....	Do	2	B-C	AF	P[4]	Sp	Sp	SF	Hy	3.73	N	3.54[5]	41-11	N	39-11[5]	SS	Sh	3½	MP	90	90	80
8-D-67, D-70, D-71	1	Ex	N	.....	Do	2	B-C	AF	P[4]	Sp	Sp	SF	Hy	3.73	N	3.36	41-11	N	37-11	SS	Sh	3½	MP	90	90	80
Imperial 8-1M1	1	Ex	AF	P	Imp	3	Cr	AF	P	Sp	Sp	SF	Hy	N	N	3.18[3]	N	N	35-11[3]	SS	Sh	3½	MP	90	90	80
Plymouth 6-P-30	1	Ex	N	.....	Ply	2	B-C	AF	P	Sp	Sp	SF	Hy	3.73	4.10	3.73	41-11	41-10	41-11	SS	Sh	3¼	MP	90	90	80
8-P-31	1	Ex	N	.....	Ply	2	B-C	AF	P	Sp	Sp	SF	Hy	3.54	3.91	3.36[6]	39-11	43-11	37-11[6]	SS	Sh	3½	MP	90	90	80
8-P-31 Fury	1	Ex	N	.....	Ply	2	B-C	AF	P	Sp	Sp	SF	Hy	3.73	N	3.36	41-11	N	37-11	SS	Sh	3½	MP	90	90	80
FORD MOTOR CO.																									
Continental 8-60A	2	Ex	Ba	P	Spi	3	Cr	NR	GF	Sp	Sp	SF	Hy	N	N	3.07	N	N	.....	Sh	Sh	4	EP	90	90	80
Ford 8-57A, 57B, 58A, 58B, 73A, 73B	1	Ex	N	.....	Spi	2	Cr	NR	P	Sp	Sp	SF	Hy	3.70	3.89	3.10	.....	.....	.....	Sh	Sh	4½	EP	90	90	80
8-57A, 57B, 58A, 58B, 73A, 73B	1	.....	N	.....	Spi	2	Cr	NR	P	Sp	Sp	SF	Hy	3.56	3.70	3.10	.....	.....	.....	Sh	Sh	4½	EP	90	90	80
8-40A, 40B	1	Ex	N	.....	Spi	2	Cr	NR	GF	Sp	Sp	SF	Hy	3.56	3.70	3.10	.....	.....	.....	Sh	Sh	3½	ME	90	90	80
Lincoln 8-57A, B; 58A, B; 60A, B; 76B	1	Ex	N	.....	Spi	2	Cr	NR	GF	Sp	Sp	SF	Hy	N	N	3.07[7]	N	N	.....	Sh	Sh	4	NA	80	88	.....
Mercury 8-57A, 57B, 58A, 58B	1	Ex	N	.....	Spi	2	Cr	NR	GF	Sp	Sp	SF	Hy	3.70	3.89	3.22	37-10	35-9	29-9	Sh	Sh	5	EP	90	80	.....
8-75A	1	Ex	N	.....	Spi	2	Cr	NR	GF	Sp	Sp	SF	Hy	N	N	3.22	N	N	29-9	Sh	Sh	5	EP	90	80	.....
GENERAL MOTORS CORP.																									
Buick 8-40	2	TT	Ba	P	Sag[8]	2	Cr	Pl[9]	T[10]	TT	TT	SF	Hy	3.56	N	3.07	43-12	N	43-14	Sh	Sh	6	Hy	90	90	90
8-50, 60, 70	2	TT	Ba	P	Sag[8]	2	Cr	Pl[9]	T[10]	TT	TT	SF	Hy	N	N	3.07	N	N	43-14	Sh	Sh	6	Hy	90	90	90
Cadillac 8-60, 62	2	Ex	AF	P	Mech,Sag	3	CT	Ne	P	Sp	Sp	SF	Hy	N	N	3.07[11]	N	N	.....	N	CS	5	Hy	90	90	80
8-75	2	Ex	AF	P	Mech,Sag	3	CT	Ne	P	Sp	Sp	SF	Hy	N	N	3.36	N	N	.....	N	CS	5	Hy	90	90	80
Chevrolet 6-1500, 2100, 2400	1	Ex	N	.....	Chev	2	YS	AF	P	Sp	Sp	SF	Hy	3.55	4.11	3.36	39-11	37-9	37-11	Sh	N	4	Hy	90	90	90
8-(265 cu. in.) 1500, 2100, 2400	1	Ex	N	.....	Chev	2	YS	AF	P	Sp	Sp	SF	Hy	3.55	4.11	N	39-11	37-9	N	Sh	N	4	Hy	90	90	90
8-(.93 cu. in.) 1500, 2100, 2400	1	Ex	N	.....	Chev	2	YS	AF	P	Sp	Sp	SF	Hy	3.55[12]	4.11[13]	3.36	39-11[12]	37-9[13]	37-11	Sh	N	4	Hy	90	90	90
8-2934	1	Ex	N	.....	Chev	2	YS	AF	GF	Sp	Sp	SF	Hy	3.70	N	3.55	37-10	N	39-11	Sh	N	4	Hy	90	90	80
Oldsmobile 8-88	2	Ex	AF	P	Sag	3	Cr	Ne	P	Sp	Sp	SF	Hy	3.64	N	3.23	40-11	N	42-13	Sh	Nu	5¼	MP	90	90	90
8-Super 88	2	Ex	AF	P	Sag	3	Cr	Ne	P	Sp	Sp	SF	Hy	3.64	N	3.42	40-11	N	41-12	Sh	Nu	5¼	MP	90	90	90
8-98	2	Ex	AF	P	Sag	3	Cr	Ne	P	Sp	Sp	SF	Hy	N	N	3.42	N	N	41-12	Sh	Nu	5¼	MP	90	90	90
Pontiac 8-57-27 Chieftain, Super Chief	1	Ex	N	.....	Sag	2	Cr	AF	P	Sp	Sp	SF	Hy	3.42	N	3.08	41-12	N	40-13	Sh	CS	5	Hy	90	90	90
8-57-27 Star Chief, 57-28	1	Ex	N	.....	Sag	2	Cr	AF	P	Sp	Sp	SF	Hy	3.42	N	3.23	41-12	N	42-13	Sh	CS	5	Hy	90	90	90
STUDEBAKER-PACKARD CORP.																									
Packard 8-57L	2	Ex	AF	P	Spi	3	Cr	Ne	GF	Sp	Sp	SF	Hy	N	4.27	3.31	N	.....	.....	Sh	Sh	3	Hy	90	90	90
Studebaker 8-57G	2	Ex	AF	P	Spi	3	Cr	Ne	GF	Sp	Sp	SF	Hy	4.10	4.56	3.54	.....	.....	.....	Sh	Sh	2½	Hy	90	90	90
8-57B, 57H	2	Ex	AF	P	Spi	3	Cr	Ne	GF	Sp	Sp	SF	Hy	3.54	3.92[14]	3.31	.....	.....	.....	Sh	Sh	3	Hy	90	90	90
8-57H Golden Hawk	2	Ex	AF	P	Spi	3	Cr	Ne	GF	Sp	Sp	SF	Hy	N	4.27	3.31	N	.....	.....	Sh	Sh	3	Hy	90	90	90

ABBREVIATIONS

1—None with auto. trans.
2—Or 35-8.
3—Flat areas of the country will be equipped with 2.92 (38-13) except with air conditioning.
4—Ball and trunnion joint must be cleaned and repacked.
5—Power Flite only; Torque Flite, 3.36 (37-11).
6—Power Flite only; Torque Flite, 3.18 (35-11).
7—3.31 with air conditioning.
8—Front only; rear, Saginaw and Spicer.
9—Front only; rear, anti-friction.
10—Front only; rear, prepacked.
11—3.36 on Eldorado models.
12—Used only with one or two four barrel carburetors or fuel injection.
13—Used only with four barrel carburetor.
14—Classic, 4.09.

AF—Anti-friction.
Ba—Ball bearing.
B-C—Ball and trunnion on front and cross on rear.
Chev—Chevrolet.
Chry—Chrysler.
Cr—Cross.
CS—Collapsible spacer.
CT—Cross and trunnion.
DeS—De Soto.
Do—Dodge.
EP—Extreme pressure hypoid.
Ex—Exposed.
GF—Grease fitting.
HS—Hardy-Spicer.
Hy—Hypoid.
Imp—Imperial.
ME—Multi-purpose extreme pressure.
Mech—Mechanics.
MP—Multi-purpose hypoid gear lubricant.
N—No or none.
NA—Not available.
Ne—Needle.
NR—Needle roller.
Nu—Nut.
P—Pre-packed.
Pl—Plain.
Ply—Plymouth.
Sag—Saginaw Steering Gear.
SF—Semi-floating.
Sh—Shim.
Sp—Springs.
Spi—Spicer.
SS—Solid shim.
T—By transmission.
TF—Three quarter floating.
TT—Torque tube.
Uni—Universal.
Var—Various.
YS—Yoke and spider.

TIRES AND BRAKES

PASSENGER CAR MAKE AND MODEL	TIRES		SERVICE BRAKES																						PARKING BRAKES		
							Drum			Brake Lining									Wheel Cylinder Bore								
								Diameter				Primary				Secondary											
	Rev./Mile at 30 mph	Tire Size	Type	Booster Type	Effective Area (sq. in.)	Percent Effectiveness—Rear	Type and Material	Front	Rear	Bonded or Riveted	Material	Size (length-width-thickness) Front Wheel	Size (length-width-thickness) Rear Wheel	Segments per Shoe	Material	Size (length-width-thickness) Front Wheel	Size (length-width-thickness) Rear Wheel	Segments per Shoe	Front	Rear	Master Cylinder Bore	Available Pedal Travel	Line Pressure at 100 lb. Pedal Load	Shoe Clearance Adjustment	Type of Control	Location of Control	Operates on
AMERICAN MOTORS CORP.																											
Hudson 8-35780	765.0	8.00/14	HM	Vac[1]	197.9	43	CIA	11	11	R	Mo	10 3/16 x 2 1/2 x 3/16	9 3/16 x 2 x 3/16	1	Mo	11 3/16 x 2 1/2 x 3/16	11 3/16 x 2 x 3/16	1	1 1/16	7/16	1	6	670	.015	HL	UL	RB
Metropolitan 4-561, 562	905.0	5.20/13	H	N	76.8	40	CAI	8	8	B	Mo	7 3/16 x 1 1/4 x 1/16	7 3/16 x 1 1/4 x 1/16	1	Mo	7 3/16 x 1 1/4 x 1/16	7 3/16 x 1 1/4 x 1/16	1	3/4	3/4	3/4	4 3/4	1000	FI	HL	UL	RB
Nash 8-5780	765.0	8.00/14	H	Vac[1]	197.9	43	CIA	11	11	R	Mo	10 3/16 x 2 1/2 x 3/16	9 3/16 x 2 x 3/16	1	Mo	11 3/16 x 2 1/2 x 3/16	11 3/16 x 2 x 3/16	1	1 1/16		1	6	670	.015	HL	UL	RB
Rambler 8-5710	765.0	6.40/15	H	Vac[1]	150.2	37	CIA	9	9	R	Mo	7 3/16 x 2 1/4 x 3/16	7 3/16 x 2 x 3/16	1	Mo	9 3/16 x 2 1/2 x 3/16	9 3/16 x 2 x 3/16	1	1		1	6 1/2	980	.015	HL	UL	RB
..... 8-5720	748.0	6.70/15	H	Vac[1]	150.2	37	CIA	9	9	R	Mo	7 3/16 x 2 1/4 x 3/16	7 3/16 x 2 x 3/16	1	Mo	9 3/16 x 2 1/2 x 3/16	9 3/16 x 2 x 3/16	1	1		1	6 1/2	860	.015	HL	UL	RB
CHRYSLER CORP.																											
Chrysler 8-C-75	747.0	8.50/14	H	Vac[1]	251.0	40	Cen	12	12	B	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	1 1/16	1 1/16	1 1/16	6[2]	750[3]	NMA	TM	UL	TS
..... 8-C-75	732.0	9.00/14	H	Vac[1]	251.0	40	Cen	12	12	B	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	1 1/16	1 1/16	1 1/16	6[2]	750[3]	NMA	TM	UL	TS
..... 8-C-76-300	732.0	9.00/14	H	Vac	251.0	40	Cen	12	12	B	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	1 1/16	1 1/16	1 1/16	4 1/2	1100	NMA	TM	UL	TS
De Soto 8-S-27	760.0	8.00/14	H	Vac[1]	230.0	40	Com	11	11	B	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 1/2 x 3/16	1	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 1/2 x 3/16	1	1 1/16	1 1/16	1 1/16	6[2]	750[3]	NMA	TM	UL	TS
..... 8-S-25, S-26	747.0	8.50/14	H	Vac[1]	251.0	40	Cen	12	12	B	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	1 1/16	1 1/16	1 1/16	6[2]	750[3]	NMA	TM	UL	TS
Dodge 6-D-72	775.0	7.50/14	H	Vac[1]	207.0	35	Com	11	11	B	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 1/2 x 3/16	1	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 1/2 x 3/16	1	1 1/16	1 1/16	1 1/16	6[2]	750[5]	NMA	TM	UL	TS
..... 8-D-66	775.0	7.50/14	H	Vac[1]	207.0[4]	35[4]	Com	11	11	B	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 x 3/16[4]	1	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 x 3/16[4]	1	1 1/16	1 1/16	1 1/16	6[2]	750[5]	NMA	TM	UL	TS
..... 8-D-67	760.0	8.00/14	H	Vac[1]	207.0[4]	35[4]	Com	11	11	B	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 1/2 x 3/16[4]	1	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 1/2 x 3/16[4]	1	1 1/16	1 1/16	1 1/16	6[2]	750[5]	NMA	TM	UL	TS
..... 8-D-70, D-71	760.0	8.00/14	H	Vac[1]	230.0	40	Com	11	11	B	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 1/2 x 3/16	1	MA	11 1/2 x 2 1/2 x 3/16	11 1/2 x 2 1/2 x 3/16	1	1 1/16	1 1/16	1 1/16	6[2]	750[5]	NMA	TM	UL	TS
Imperial 8-1M1	719.0	9.50/14	H	Vac	251.0	40	Cen	12	12	B	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/2 x 3/16	1	1 1/16	1 1/16	1 1/16	4 5/8	1100	NMA	FO	UL	TS
Plymouth 6-P-30, 8-P-31	775.0	7.50/14	H	Vac[1]	184.0	40	Cen	11	11	B	MA	11 1/2 x 2 x 3/16	11 1/2 x 2 x 3/16	1	MA	11 1/2 x 2 x 3/16	11 1/2 x 2 x 3/16	1	1 1/16	1 1/16	1 1/16	6[2]	750[5]	NMA	TM	UL	TS
..... 8-P-31 Fury	760.0	8.00/14	H	Vac[1]	184.0	40	Cen	11	11	B	MA	11 1/2 x 2 x 3/16	11 1/2 x 2 x 3/16	1	MA	11 1/2 x 2 x 3/16	11 1/2 x 2 x 3/16	1	1 1/16	1 1/16	1 1/16	6[2]	750[5]	NMA	TM	UL	TS
FORD MOTOR CO.																											
Continental 8-60A	711.0	8.00/15	H	Vac	207.5	42	Com	12	12	R	MA	10 3/16 x 2 1/2 x 3/16	10 3/16 x 2 x 3/16	1	MA	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 x 3/16	1	1 1/16	3/16	3/16	4 1/2	1110	.010	CH	UL	RB
Ford .6, 8-57A, B; 58A, B; 73A, B	811.0	7.50/14	H	Vac[1]	180.2	38	Com	11	11	R	MA	10 5/16 x 2 1/4 x 1/16	10 5/16 x 1 3/4 x 1/16	1	MA	11 1/16 x 2 1/4 x 1/16	11 1/16 x 1 3/4 x 1/16	1	1 1/16	5/16	1	6 1/2	700	.010	TM	UL	RB
..... 8-40A, 40B	773.0	7.50/14	H	N	176.0	45	Com	11	11	R	MA	11 x 2 x 1/4	11 x 1 3/4 x 1/4	1	MA	11 x 2 1/2 x 1/4	11 x 2 x 1/4	1	1 1/16		1	6 1/2	700	.010	TM	UL	RB
Lincoln 8-57A, B; 58A, B; 60A, B; 76B	706.0	8.00/15	H	Vac	207.5	42	PSD	12	12	R	MA	10 1/16 x 2 1/2 x 3/16	10 1/16 x 2 x 3/16	1	MA	12 1/16 x 2 1/2 x 3/16	12 1/16 x 2 x 3/16	1	1 1/16		3/16	4 1/2	NA	....	TM	UL	RB
Mercury 8-57A, 57B, 58A, 58B	774.0	8.00/14[6]	H	Vac[1]	212.1	41	PSD	11	11	R	MA	9 3/16 x 2 1/2 x 3/16	9 3/16 x 2 x 3/16	1	MA	11 1/16 x 2 1/2 x 3/16	11 1/16 x 2 x 3/16	1	1 1/16		1	6 1/2	700	.010	SL	UL	RB
..... 8-75A	774.0	8.00/14[6]	H	Vac	233.4	41	PSD	11	11	R	MA	9 3/16 x 3 x 1/16	9 3/16 x 2 1/2 x 1/16	1	MA	11 1/16 x 3 x 1/16	11 1/16 x 2 1/2 x 1/16	1	1 1/16		3/16	4 3/4	1050	.010	SL	UL	RB
GENERAL MOTORS CORP.																											
Buick 8-40	750.0	7.10/15	H	Vac[7]	192.7	47	CCI	12	12	R	ME	10 3/16 x 2 1/4 x 3/16	10 3/16 x 2 1/4 x 3/16	1	ME	12 3/16 x 2 1/4 x 3/16	12 3/16 x 2 1/4 x 3/16	1	1 1/16	1	1	6 3/4	630	.015	SL	LC	RB
..... 8-50, 60	735.0	7.60/15	H	Vac[7]	192.7	47	CCI	12	12	R	ME	10 3/16 x 2 1/4 x 3/16	10 3/16 x 2 1/4 x 3/16	1	ME	12 3/16 x 2 1/4 x 3/16	12 3/16 x 2 1/4 x 3/16	1	1 1/16	1	1	6 3/4	600	.015	SL	LC	RB
..... 8-70	723.0	8.00/15	H	Vac[7]	204.2	47	CCI	12	12	R	ME	10 3/16 x 2 1/2 x 3/16	10 3/16 x 2 1/4 x 3/16	1	ME	12 3/16 x 2 1/2 x 3/16	12 3/16 x 2 1/4 x 3/16	1	1 1/16	1	1	6 3/4	630	.015	SL	LC	RB
Cadillac 8-60, 62	711.0[8]	8.00/15	H	Vac	210.3	....	Com	12	12	R	MA	10 3/16 x 2 1/2 x 1/4	10 3/16 x 2 1/2 x 1/4	1	MA	12 3/16 x 2 1/2 x 1/4	12 3/16 x 2 1/2 x 1/4	1	1 1/16	1	3/16	4 1/2	930	.010[10]	FO	LS	RB
..... 8-75	706.0[9]	8.20/15	H	Vac	233.7	....	Com	12	12	R	MA	12 3/16 x 2 1/2 x 1/4	12 3/16 x 2 1/2 x 1/4	1	MA	12 3/16 x 2 1/2 x 1/4	12 3/16 x 2 1/2 x 1/4	1	1 1/16	1	3/16	4 1/2	930	.010[10]	FO	LS	RB
Chevrolet .. 6, 8-1500, 2100, 2400	784.0	7.50/14	H	Vac[1]	157.0	44	Com	11	11	B	MA	9 3/16 x 2 x 3/16	9 3/16 x 1 3/4 x 3/16	1	MA	11 3/16 x 2 x 3/16	11 3/16 x 1 3/4 x 3/16	1	1 1/16	1	1	6 3/4	460	ALD	TM	UL	RB
..... 8-2934	755.0	6.70/15	H[11]	N	157.0[12]	44[13]	Com	11	11	B[14]	MA[15]	9 3/16 x 2 x 3/16[16]	9 3/16 x 1 3/4 x 3/16[17]	1[18]	MA[15]	11 3/16 x 2 x 3/16[16]	11 3/16 x 1 3/4 x 3/16[17]	1[19]	1 1/16	1[20]	1	4 1/2	700	ALD	TM	UL	RB
Oldsmobile .. 8-88, Super 88, 98	747.0	8.50/14	H	Vac[1]	191.7	44	Cen	11	11	R	....	9 3/16 x 2 1/2 x 1/4	9 3/16 x 2 x 1/4	1	....	12 3/16 x 2 1/2 x 1/4	12 3/16 x 2 x 1/4	1	1 3/16	3/16	1	6 1/2	735	.015	FO	LS	RB
Pontiac 8-57-27, 57-28	754.[21]	8.00/14[22]	H	Vac[1]	178.0	44	CCI	12	11	R	MA	10 1/16 x 2 1/4 x 3/16	9 1/16 x 1 3/4 x 3/16	1	MA	12 1/16 x 2 1/4 x 3/16	11 1/16 x 1 3/4 x 3/16	1	1 1/16	1/16	1	5 1/2	760	.015	SL	UL	RB
STUDEBAKER-PACKARD CORP.																											
Packard 8-57L	727.0	7.60/15	H	Vac[1]	195.3	38	Com	11	10	R	....	12 x 2 1/4 x 3/16	10 3/16 x 2 x 3/16	1	....	12 x 2 1/4 x 3/16	10 3/16 x 2 x 3/16	1	1 1/16	7/16	1	6	890	.007	HL	RS	RB
Studebaker 6-57G	771.[23]	6.40/15[24]	H	Vac[1]	166.0	38	Com	10	9	R	....	10 3/16 x 2 x 3/16	9 3/16 x 2 x 3/16	1	....	10 3/16 x 2 x 3/16	9 3/16 x 2 x 3/16	1	1	3/16	1	6	890	.007	HL	RS	RB
..... 8-57B, 57H	753.[25]	6.70/15[26]	H	Vac[1]	195.3	38	Com	11	10	R	....	12 x 2 1/4 x 3/16	10 3/16 x 2 x 3/16	1	....	12 x 2 1/4 x 3/16	10 3/16 x 2 x 3/16	1	1 1/16	3/16	1	6	890	.007	HL	RS	RB
..... 8-57H Golden Hawk	739.0	7.10/15	H	Vac[1]	195.3	38	Com	11	10	R	....	12 x 2 1/4 x 3/16	10 3/16 x 2 x 3/16	1	....	12 x 2 1/4 x 3/16	10 3/16 x 2 x 3/16	1	1 1/16	3/16	1	6	890	.007	HL	RS	RB

ABBREVIATIONS

1—Optional.
2—4⅝ with power brakes.
3—1100 with power brakes.
4—Four door hardtops and convertibles are the same as D-70 and D-71 models.
5—1200 with power brakes.
6—8.50/14 with air conditioning.
7—Optional with auto. trans. only.
8—Firestone only; U. S. Royal, 720.0; Goodrich, 717.0.
9—Firestone only; U. S. Royal, 712.0; Goodrich, 706.0.
10—Top only; bottom, .015.
11—Heavy duty brakes optional.
12—121.0 with heavy duty brakes.
13—38 with heavy duty brakes.
14—Welded with heavy duty brakes.
15—Sintered metal and ceramic with heavy duty brakes.
16—2¼ x 2½ x 3/16 with heavy duty brakes.
17—2¼ x 2 x 3/16 with heavy duty brakes.
18—Two with heavy duty brakes.
19—Four with heavy duty brakes.
20—⅞ with heavy duty brakes.
21—771.0 on 57-27 Chieftain.
22—7.50/14 on 57-27 Chieftain.
23—753.0 on Silver Hawk and Pelham.
24—6.70/15 on Silver Hawk and Pelham.
25—739.0 on Classic.
26—7.10/15 on Classic.

ALD—Adjust to light drag and back off seven notches.
B—Bonded.
CAI—Chrome alloy cast iron.
CCI—Centrifugally cast iron.
Cen—Centrifuse.
CH—Cane handle.
CIA—Cast iron alloy.
Com—Composite.
FI—Floating.
FO—Foot operated.
H—Hydraulic internal expanding.
HL—Hand lever.
HM—Hydraulic internal expanding with mechanical reserve on rear wheels.
LC—Left side cowl panel.
LS—Left of steering column.
MA—Moulded asbestos.
ME—Moulded extruded.
Mo—Moulded.
N—No or none.
NA—Not available.
NMA—No major adjustment required.
PSD—Pressed steel disc fused to cast iron rim.
R—Riveted. RB—Rear brakes.
RS—Right of steering column.
SL—Stop on lever with release button.
TM—"T" handle, multiple pawl ratchet.
TS—Transmission output shaft.
UL—Under instrument panel, left of steering wheel.
Vac—Vacuum.

For Directory of Car Manufacturers listed above, see Table of Contents

FRONT SUSPENSION AND STEERING

PASSENGER CAR MAKE AND MODEL	FRONT SUSPENSION											STEERING																	
		Spring						Shock Absorbers						Turning Diameter			Mechanical				Power						Linkage			
																	Gear						Gear						
																			Ratios (to-1)				Ratios (to-1)						
	Type	Type	Free Length	I. D. of Coil	Spring Rate (lb. per in.)	Rate at Wheel (lb. per in.)	Normal Load (lb. @ rated length)	Make	Type	Piston Diam. (in.)	Stabilizer—Type	Type	Wheel Diameter	Wall to Wall (outside front)	Curb to Curb (outside front)	Inside Wheel Angle with Outside Wheel at 20 (deg.)	Type	Make	Gear	Overall	Type	Make	Type	Gear	Overall	Pump Driven by	Type	Location	Drag Link	Tie Rods
AMERICAN MOTORS CORP.																													
Hudson 8-35780	IDA	Co		5⅛	109[1]	102[2]	1050–9½L[3]	Mon	D	1	LI	Mec	18	45'0"	42'0"	23.3	WR	Gem	18.0	25.4	Lk	Mon	WR	18.0	23.1	BC	BS	R	Tr	2
Metropolitan 4-661, 662	IDC	Co		3½	100	96	546	Gir	D	1	N	Mec	17	39'11"L	37'9"L	24.0	CL	CGL	13.5	21.0	N						BS	R	Tr	2
Nash 8-5780	IDA	Co		5⅛	109[1]	102[2]	1050–9½L[3]	Mon	D	1	LI	Mec	18	45'0"	42'0"	23.3	WR	Gem	18.0	25.4	Lk	Mon	WR	18.0	23.1	BC	BS	R	Tr	2
Rambler 8-5710	IDC	Co		5	110L	94L	960–8½L	Del	D	1	N	Mec	17	40'1"L	37'6"	22.3	WR	Gem	20.0	23.0	Lk	Mon	WR	20.0	17.2	BC	BS	F	Tr	2
8-6720	IDC	Co		5	110L	94L	1000–8½L	Del	D	1	N	Mec	17	40'1"L	37'6"	22.3	WR	Gem	20.0	23.0	Lk	Mon	WR	20.0	17.2	BC	BS	F	Tr	2
CHRYSLER CORP.																													
Chrysler 8-C-75-1	ITB	TB	48⅜		NA	108	NA	Chr	D	1	LI	Mec	17	47'11"	45'3"	21.8	WR	Gem	20.4	29.9	In	Chr	RGR	16.3	19.8	FP	SE	R	Tr	2
8-C-75-2	ITB	TB	48⅜		NA	108	NA	Chr	D	1	LI	Pow	17	47'11"	45'4"	21.8	N				In	Chr	RGR	16.3	19.8	FP	SE	R	Tr	2
8-C-76	ITB	TB	48⅜		NA	112	NA	Chr	D	1	LI	Pow	17	47'11"	45'4"	21.8	N				In	Chr	RGR	16.3	19.8	FP	SE	R	Tr	2
8-C-76-300	ITB	TB	48⅜		NA		NA	Chr	D	1	LI	Mec	17	47'11"	45'4"	21.8	WR	Gem	20.4	29.9	In	Chr	RGR	16.3	19.8	FP	SE	R	Tr	2
De Soto 8-S-27	ITB	TB	44⅜		NA		NA	DeS	D	1	N	Mec	17	46'2"	43'9"	21.6	WR	Gem	18.2	26.8	In	DeS	RGR	16.3	19.8	FP	SE	R	Tr	2
8-S-28, S-28	ITB	TB	48⅜		NA		NA	DeS	D	1	LI	Mec	17	47'11"	45'3"	21.8	WR	Gem	20.4	29.9	In	DeS	RGR	16.3	19.8	FP	SE	R	Tr	2
Dodge 6-D-72, 8-D-68, D-67-1	ITB	TB	44⅜		NA		NA	Do	D	1	N	Mec	17	46'7"	43'9"	21.6	WR	Do	18.2	26.8	In	Do	RGR	16.3	19.8	FP	SE	R	Tr	2
8-D-67-2, D-70, D-71	ITB	TB	44⅜		NA		NA	Do	D	1	LI	Mec	17	46'7"	43'9"	21.6	WR	Do	18.2	26.8	In	Do	RGR	16.3	19.8	FP	SE	R	Tr	2
Imperial 8-1M1	ITB	TB	48⅜		NA	116	NA	Imp	D	1	LI	Pow	17	49'5"	46'5"	21.8	N				In	Imp	RGR	16.3	19.8	FP	SE	R	Tr	2
Plymouth 8-P-30	ITB	TB	44⅜		NA	105	NA	Ply	D	1	N	Mec	17	45'1"	42'4"	21.6	WR	Ply	18.2	26.8	In	Ply	RGR	16.3	19.8	FP	SE	R	Tr	2
8-P-31	ITB	TB	44⅜		NA	120	NA	Ply	D	1	N	Mec	17	45'1"	42'4"	21.6	WR	Ply	18.2	26.8	In	Ply	RGR	16.3	19.8	FP	SE	R	Tr	2
8-P-31 Fury	ITB	TB	44⅜		NA	145	NA	Ply	D	1	N	Mec	17	45'1"	42'4"	21.6	WR	Ply	18.2	26.8	In	Ply	RGR	16.3	19.8	FP	SE	R	Tr	2
FORD MOTOR CO.																													
Continental 8-60A	ICB	Co	15⅞	4¼	450	126	2690–9⅞	Gab	D	1⅜	LI	Pow	17	47'7"	45'2"	25.8	N				In	Sag	RBN	17.5	20.9	BC	Par	R	Tr	2
Ford 6, 8-57A, 57B, 58A, 58B	IBJ	Co	14⅛	4	400		2075–9⅛	FMG	D	1	LI	Mec	17½	42'11"	40'2"	23.3	WR	Fo	20.0	27.0	Lk	Ben	WR	20.0	27.0	BC	Par	R	Tr	2
6, 8-73A, 73B	IBJ	Co	15⅛	4	400		2175–9⅛	FMG	D	1	LI	Mec	17½	43'5"	40'8"	23.3	WR	Fo	20.0	27.0	Lk	Ben	WR	20.0	27.0	BC	Par	R	Tr	2
8-40A, 40B	IBJ	Co	14⅛	4½	290		1540–	Gab	D	1	LI	Mec	17	37'5"	35'0"	24.5	WR	Fo	20.0	23.0	Lk	Ben	WR	20.0	23.0	BC	Par	R	Tr	2
Lincoln 8-57A, B; 58A, B; 60A, B; 76B	IBJ	Co	16⅛	4¼	360	97	2500–10		D	1⅜	LI	Pow	18	49'1"	45'6"	24.4	N					Sag	RB	17.5	20.9	BC	Par	R	Tr	2
Mercury 8-57A, 57B, 58A, 58B	IBJ	Co	17⅛	4½	330	107	2330–10½	FG	D	1	LI	Mec	17		43'4"	24.8	RBR	Sag	20.0	27.0	Lk	Ben	RBR	20.0	27.0	BC	Par	R	Tr	2
8-75A	IBJ	Co	17⅝	4½	360	107	2450–10½	FG	D	1	LI	Pow	17		43'4"	24.8	N				Lk	Ben	RBR	20.0	27.0	BC	Par	R	Tr	2
GENERAL MOTORS CORP.																													
Buick 8-40, 60	BJC	Co		4¼	390	82	2450–10	Del	D	1	LI	Mec	17½	45'8"	43'2"	21.0	RBN	Sag	23.6	26.8		Sag	RBP	17.5	19.7	BC	Par	R	Tr	2
8-50, 70	BJC	Co		4¼	415	88	2580–10	Del	D	1	LI	Pow	17½	47'2"	44'6"	22.0	N					Sag	RBP	17.5	19.7	BC	Par	R	Tr	2
Cadillac 8-60, 62	ICS	Co	17⅛[4]	4	350[5]		2400–10⅛[6]	Del	D	1	LI	Pow	18			22.7	N					Sag	BNS	17.5	19.5	BC	PDL	R	Tr	2
8-75	ICS	Co	16½	4	475		2800–10½	Del	D	1	LI	Pow	18			22.7	N					Sag	BNS	17.5	19.5	BC	PDL	R	Tr	2
Chev. 6, 8 (265 cu. in.) 1500, 2100, 2400	ISJ	Co	15⅛	3⅜	311	109	1710–9½	Del	D	1	N	Mec	18	44'6"	41'6"	24.0	SRB	Sag	20.0	25.7		Sag	SRB	20.0	23.3	GS	RL	R	Lg	2
8 (283 cu. in.) 1500, 2100, 2400	ISJ	Co	15⅛	3⅜	311	109	1790–9½	Del	D	1	N	Mec	18	44'6"	41'6"	24.0	SRB	Sag	20.0	25.7		Sag	SRB	20.0	23.3	GS	RL	R	Lg	2
8-2934	UIS[7]	Co	13⅜	3½	300[9]	110	1145–9⅝	Del	D[7]	1	LI[7]	Mec	17½	39'0"L	37'0"L	23.0	SWR	Sag	16.0	16.0	N						CP	R	Lg	2
Oldsmobile 8-88	ICS	Co		4⅛	300	100	2345–	Del	D	1	LI	Mec	17½	44'10"	42'0"	23.0	BN	Sag	21.3	27.3		Sag	BN	19.0	22.7	BC	Sym	R	Tr	2
8-Super 88	ICS	Co		4⅛	300	100	2415–	Del	D	1	LI	Mec	17½	44'10"	42'0"	23.0	BN	Sag	21.3	27.3		Sag	BN	19.0	22.7	BC	Sym	R	Tr	2
8-98	ICS	Co		4⅛	300	100	2485–	Del	D	1	LI	Pow	17½	46'6"	43'0"	23.0	N					Sag	BN	19.0	22.7	BC	Sym	R	Tr	2
Pontiac 8-57-27	ILC	Co		3½	290	81	1985–10[9]	Del	D	1	LI	Mec	17½	45'0"	42'6"	22.5	RBB	Sag	20.0	25.0		Sag	RBB	17.5	22.5	BC	LP	R	N	2
8-56-28	ILC	Co		3½	290	81	1985–10[9]	Del	D	1	LI	Mec	17½	45'6"	43'0"	22.5	RBB	Sag	20.0	25.0		Sag	RBB	17.5	22.5	BC	LP	R	N	2
STUDEBAKER-PACKARD CORP.																													
Packard 8-57L	ICS	Co		4⅛	350	95	1655–8½	MG	D	1⅜	LI	Pow	17½	43'6"	40'6"	23.0	N				In	Sag	RB	21.3	18.2	BC	Cel	R	Lg	2
Studebaker 6 57G	ICS	Co		4⅛	250	80	1440–8½	MG	D	1		Mec	17½	42'0"	39'0"	23.0	CTL	Ros	16.5	21.5	In	Sag	RB	19.0	18.2	BC	Cel	R	Lg	2
8-57B, 57H	ICS	Co		4⅛	315	90	1565–8½	MG	D	1	LI	Mec	17½	42'0"	39'6"	23.0	CSL	Ros	22.0	24.5	In	Sag	RB	19.0	18.2	BC	Cel	R	Lg	2
8-57H Golden Hawk	ICS	Co		4⅛	280	117	1565–8½	MG	D	1	LI	Mec	17½	43'6"	40'6"	23.0	CSL	Ros	22.0	24.5	In	Sag	RB	19.0	18.2	BC	Cel	R	Lg	2

ABBREVIATIONS

1—Late production, 96.
2—Late production, 90.
3—Auto. trans., std. trans. and overdrive with air conditioning, 1125–9½L; auto. trans. and air conditioning, 1200–9½L.
4—Series 62 sedan, sedan De Ville, coupe and coupe De Ville only; Series 62 convertible coupe, Eldorado coupe and Series 60 sedan, 16⅛; Eldorado coupe, 16⅜.
5—Series 62 sedan, sedan De Ville, coupe and coupe De Ville only; Series 62 convertible coupe, Eldorado coupe and Series 60 sedan, 375; Eldorado coupe, 400.
6—Series 62 sedan, sedan De Ville, coupe and coupe De Ville only; Series 62 convertible coupe, Eldorado coupe and Series 60 sedan, 2500–10⅛; Eldorado coupe, 2550–10⅛.
7—Heavy duty suspension which includes HD front and rear springs, HD front and rear shock absorbers and HD stabiliser, optional.
8—340 with heavy duty front springs.
9—2085–10 with auto. trans.
BC—Belt to crank pulley.
Ben—Bendix.
BJC—Ball joint with coil springs.
BN—Ball nut.
BNS—Ball nut and sector.
BS—Ball and socket.
Cel—Center steering with equal length tie rods. **CGL**—Cam Gears, Ltd.
Chr—Chrysler. **Co**—Coil.
CL—Cam and lever. **CP**—Center point.
CSL—Cam and single lever roller stud.
CTL—Cam and twin lever. **D**—Direct.
DeS—De Soto. **Del**—Delco.
Do—Dodge. **F**—Front of wheels.
FD—Fan drive pulley.
FG—Ford or Gabriel.
FMG—Ford, Monroe or Gabriel.
Fo—Ford. **Gem**—Gemmer.
Gab—Gabriel. **Gir**—Girling.
GS—Generator shaft extension.
IBJ—Independent ball joint coil spring system incorporating two unequal length transverse control arms.
ICB—Independent control spring system incorporating two transverse control arms with rubber type bushings on inner lower and threaded bushings on inner upper and ball joint outer bearings. Wheel spindle attaches directly to ball joints.
ICS—Independent coil spring suspension.
IDA—Independent direct action.
IDC—Independent direct action coil.
ILC—Independent, lateral control with coil springs.
Imp—Imperial. **In**—Integral.
ISJ—Independent, short and long arm spherical joint outer pivots, rubber bushed inner pivots, coil springs.
ITB—Independent, lateral non-parallel control arms with torsion bars.
L—Left. **Lk**—Linkage.
Lg—Longitudinal. **LI**—Linkless.
LI—Link. **LP**—Link parallelogram.
Mec—Mechanical.
MG—Monroe or Gabriel.
Mon—Monroe. **N**—No or none.
NA—Not applicable.
Par—Parallelogram.
PDL—Parallel drag link.
Ply—Plymouth. **Pow**—Power.
R—Rear of wheels.
RB—Recirculating ball.
RBB—Recirculating ball bearing.
RBN—Recirculating ball nut.
RBP—Recirculating ball nut integral with power piston.
RBR—Recirculating ball and rack.
RGR—Rack and gear sector and recirculating ball nut.
RL—Relay link. **Ros**—Ross.
Sag—Saginaw Steering Gear Div.
SE—Symmetrical idler arm with equal length tie rods.
SRB—Semi-reversible, recirculating ball.
SWR—Semi-reversible, hour glass worm and ball bearing roller sector.
Sym—Symmetrical.
TB—Torsion bar. **Tr**—Transverse.
UIS—Unitized, independent, short and long arm.
WR—Worm and roller.

WHEEL ALIGNMENT, AND REAR SUSPENSION

PASSENGER CAR MAKE AND MODEL	ALIGNMENT: Kingpin: Inclination at Camber (deg.)	Kingpin: Diameter	Kingpin: Bearings: Upper	Kingpin: Bearings: Lower	Kingpin: Bearings: Thrust	Wheel Alignment: Caster (deg.)	Wheel Alignment: Camber (deg.)	Wheel Alignment: Toe In (Outside tread—in.)	Steering Knuckle Type	Wheel Spindle: Diameter: Inner Bearing	Wheel Spindle: Diameter: Outer Bearing	Wheel Spindle: Thread Size	Wheel Spindle: Bearing Type	REAR SUSPENSION: Spring: Type	Spring: Material	Spring: Length	Spring: Width	Spring: No. Leaves or Coil I. D.	Spring: Spring Rate (lb. per in.)	Spring: Rate at Wheel (lb. per in.)	Spring: Normal Load (lb. @ rated length)	Shock Absorbers: Make	Shock Absorbers: Type	Shock Absorbers: Piston Diameter
AMERICAN MOTORS CORP.																								
Hudson 8-35780	6½°	ISK	Re	Th	Ba	0 to ½P[1]	½N to ½P[2]	1/16 to 1/8	PK	1.2500	.7500	¾–16	TR	CS	Co	9260[3]	.....	.....	4½	128[4]	125[4]	870–10 3/16[5]	Mon	D	1
Metropolitan 4-561, 562	6½°	.6870	Bu	Bu	Pl	2P to 3P	½P to 1½P	0 to 1/16	E	.9840	.6690	⅝–	Ba	LL	Le	5150	43	1½	.....	.....	.....	422–	Gir	D	1
Nash 8-5780	6½°	ISK	Re	Th	Ba	0 to ½P[1]	½N to ½P[2]	1/16 to 1/8	PK	1.2500	.7500	¾–16	TR	CS	Co	9260[3]	.....	.....	4½	128[4]	125[4]	870–10 3/16[5]	Mon	D	1
Rambler 8-5710, 8-5720	6° 11′	ISK	Ne	Th	Ba	0 to ½P[6]	¼N to ¼P	1/16 to 1/8[7]	PK	1.2500	.7500	¾–16	TR	CS	Co	9260[3]	.....	.....	4½	96[8]	96[8]	770–10 11/16[9]	Del	D	1
CHRYSLER CORP.																								
Chrysler 8-C-75-1	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	58	2½	6	90	135[13]	800–58½L	Chr	D	1
8-C-75-2	8½° @ 0°	None	BJ	BJ	SM	0 to 1½P[11]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	58	2½	6	90	135[13]	800–58½L	Chr	D	1
8-C-76	8½° @ 0°	None	BJ	BJ	SM	0 to 1½P[11]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	58	2½	7	135	135[13]	840–58½L	Chr	D	1
8-C-76-300	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	58	2½	7	135	190[13]	750–58½	Chr	D	1
De Soto 8-S-27	8½° @ 0°	None	BJ	BJ	.....	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	55	2½	5	95	130[13]	760–55½L	DeS	D	1
8-S-25, S-26	8½° @ 0°	None	BJ	BJ	.....	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	58	2½	6	90	135[13]	800–58½L	DeS	D	1
Dodge 6-D-72	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	55	2½	4	95	130[13]	720–55½L	Do	D	1
8-D-68, D-67	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	55	2½	5	95	130[13]	760–55½L	Do	D	1
8-D-70	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	55	2½	5	125	130[13]	920–55½L[14]	Do	D	1
8-D-71	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	55	2½	5	125	130[13]	960–55½L	Do	D	1
Imperial 8-1M1	8½° @ 0°	None	BJ	BJ	SM	0 to 1½P[11]	0 to ½P[12]	1/16 to 1/8	BJ	1.3750	.8440	¾–16	TR	LL	SE	St	58	2½	7	90	145[13]	960–58½L	Imp	D	1
Plymouth 8-P-30	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	55	2½	4	93	130[13]	720–55½L	Ply	D	1
8-P-31	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	55	2½	4	95	130[13]	720–55½L	Ply	D	1
8-P-31 Fury	8½° @ 0°	None	BJ	BJ	SM	0 to 1½N[10]	0 to ½P[12]	1/16 to 1/8	BJ	1.2500	.7500	¾–16	TR	LL	SE	St	55	2½	6	125[13]	165[13]	840–55½	Ply	D	1
FORD MOTOR CO.																								
Continental 8-60A	7° 10′ @ 45′	None	BJ	BJ	Ba	½P to 1¼P[15]	0 to ¾P[16]	1/16 to 1/8	BJ	1.3118	.8128	¾–16	TR	LL	SE	5147[17]	56	2	8	135	140	1200–	Gab	D	1⅝
Ford 6, 8-57A, B; 58A, B; 73A, B	7° 1′ @ 45′	None	BJ	BJ	.....	½P to 1½P[15]	0 to 1½P[16]	1/16 to 1/8	BJ	1.2496	.7496	.....	CR	LL	SE	St	55	2	4	115	.....	845–	FMG	D	1
8-40A, 40B	7° 7′	None	BJ	BJ	Ba	½P to 1½P[15]	½P to 1½P[16]	1/16 to 1/8	BJ	1.2496	.7496	.....	TR	LL	SE	.....	55	2	5	105	.....	845–	Gab	D	1
Lincoln 8-57A, B; 58A, B; 60A, B; 76B	7° 12′ 14″	None	BJ	BJ	Ba	0 to ½N[18]	0 to ¾P[16]	1/16 to 1/8	BJ	1.3118	.8118	¾–16	TR	LL	.....	5147	54⅞	2	8	115	NA	1110–	Hou	D	1⅛
Mercury 8-57A, 57B, 58A, 58B, 75A	7°	None	BJ	BJ	Ba	0 to 1½N	0 to ¾P	1/16 to 1/8	BJ	1.2496	.7496	.....	TR	LL	SE	.....	55	2	5	95	.....	975–	FG	D	1
GENERAL MOTORS CORP.																								
Buick 8-40	7° @ 52′ 32″	None	BJ	BJ	.....	1¾N	½P	1/16 to 1/8	RE	1.3740	.8430	⅞–16	Ba	CS	Co	9260	.....	.....	5½	112	112	900–10	Del	D	1
8-50, 60, 70	7° @ 52′ 32″	None	BJ	BJ	.....	1¾N	½P	1/16 to 1/8	RE	1.3740	.8430	⅞–16	Ba	CS	Co	9260	.....	.....	5½	125	125	1025–10	Del	D	1
Cadillac 8-60, 62	4° @ 0°	None	BJ	BJ	.....	½N to 1¼N[18]	¾N to ½P[19]	1/16 to 3/32[20]	.....	2.9630	2.2500	¾–20	Ba	LL	SE	5155	56½	2½	5	120[21]	.....	1225–56 3/32[22]	Del	D	1
8-75	4° @ 0°	None	BJ	BJ	.....	½N to 1¼N[18]	¾N to ½P[19]	1/16 to 3/32[20]	.....	2.9630	2.2500	¾–20	Ba	LL	SE	5155	56½	2½	6	150	.....	1425–56 3/32	Del	D	1
Chevrolet 6, 8-1500, 2100, 2400	4°	None	BJ	BJ	.....	½P to 1½P	0 to 1P	1/16 to 1/8	RE	1.2493	.7493	¾–20	Ba	LL	SE	HAS	58	2	4	112	NA	1050–	Del	D	1
8-2934	4°	.8663	Bu	Bu	Ba	0 to 1P	0 to 1P	0 to 1/16	RE	1.2813	.7501	¾–20	Ba	LL	SE	CAS	51	2	4	115[23]	NA	725–	Del	D[24]	1
Oldsmobile 8-88, Super 88	7° @ 0°	None	BJ	BJ	.....	0 to ¾P	¼N to ¾P	1/16 to 1/8	RE	1.3739	.8430	⅞–16	BC	LL	SE	9260[25]	58	2½	5	95	115	985–59 3/32	Del	D	1
8-98	7° @ 0°	None	BJ	BJ	.....	0 to ¾P	¼N to ¾P	1/16 to 1/8	RE	1.3739	.8430	⅞–16	BC	LL	SE	9260[25]	58	2½	5	100	120	1000–59 3/32	Del	D	1
Pontiac 8-57-27	1° 20′ @ 0°	.8620	Bu	Bu	Ba	½N to 1½N	0 to 1P	0 to 1/16	RE	1.3740	.7490	¾–20	Ba	LL	SE	5155[26]	58	2	6	100	NA	900L–	Del	D	1
8-57-28	1° 20′ @ 0°	.8620	Bu	Bu	Ba	½N to 1½N	0 to 1P	0 to 1/16	RE	1.3740	.7490	¾–20	Ba	LL	SE	5155[26]	60	2	6	100	NA	950L–	Del	D	1
STUDEBAKER-PACKARD CORP.																								
Packard 8-57L	6° @ 0°	1.2500[27]	Bu	Ne	Ba	1N to 2½N[28]	0 to 1P[29]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	LL	SE	5155	50	2½	5[30]	80[31]	87[32]	7033–	MG	D	1 3/4[34]
Studebaker 6-57G	6° @ 0°	1.2500[27]	Bu	Ne	Ba	1N to 2½N[28]	0 to 1P[29]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	LL	SE	5150	50	2½	3[35]	88[36]	98[37]	7033–	MG	D	1
8-57B	6° @ 0°	1.2500[27]	Bu	Ne	Ba	1N to 2½N[28]	0 to 1P[29]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	LL	SE	5155	50	2½	4[30]	90[31]	100[32]	7033–	MG	D	1
6-57H	6° @ 0°	1.2500[27]	Bu	Ne	Ba	1N to 2½N[28]	0 to 1P[29]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	LL	SE	5155	50	2½	4[30]	77[38]	85[39]	7033–	MG	D	1
8-57H Golden Hawk	6° @ 0°	1.2500[27]	Bu	Ne	Ba	1N to 2½N[28]	0 to 1P[29]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	LL	SE	5155	50	2½	4	90	100	700–	MG	D	1

ABBREVIATIONS

1—½ P preferred; ½ P to 1 P, 1 P preferred with power steering.
2—Zero preferred
3—Or 5160.
4—135 with outside rear tire; 170 with heavy duty springs.
5—940–10⅝ with outside rear tire; 870–11¼ with heavy duty springs.
6—½ P to 1 P with power steering.
7—1/16 preferred.
8—Sedan only; sedan heavy duty and station wagon, 143; station wagon heavy duty, 155.
9—Sedan only; sedan heavy duty and station wagon, 860–11⅞; station wagon heavy duty, 860–12⅛.
10—0 to 1½P with power steering. (Footnote 11 also applies.)
11—Caster should be held as nearly as equal as possible on right and left wheels.
12—Left side only; ½P preferred; right side, ¼N to ¼P, zero preferred.
13—Without tires.
14—2 door only; 4 door, 960–55½L.
15—Not to vary more than ½° one side to other.
16—Not to vary more than ¼° one side to other.
17—Or 5160, 5155 and 4068.
18—1N preferred.
19—Left side to be ¼° to ½° greater than right side.
20—3/32 preferred.
21—Series 60 sedan, Series 62 Eldorado coupe and convertible coupe only; Series 62 coupe and coupe De Ville, 115; Series 62 sedan and sedan De Ville, 130; Series 62 Eldorado convertible, 125.
22—Series 60 sedan, Series 62 Eldorado coupe and convertible coupe only; Series 62 coupe and coupe De Ville, 1175–56 3/32; Series 62 sedan and sedan De Ville, 1200–56 3/32; Series 62 Eldorado convertible, 1250–56 3/32.
23—125 with optional heavy duty springs.
24—Heavy duty shock absorbers optional.
25—Or 5160 and 5155.
26—Or 5160 and 9255.
27—Upper only; lower, 1.1250.
28—Not more than ¾° variation between wheels.
29—½° greater camber favored on driver's side.
30—Station wagon, 6.
31—Station wagon, 143.
32—Station wagon, 151.
33—Station wagon, 825.
34—Station wagon, 1.
35—Silver Hawk, 4; Pelham, 6.
36—Silver Hawk, 95; Pelham, 143.
37—Silver Hawk, 105; Pelham, 151.
38—Silver Hawk, 90; Broadmoor, 143.
39—Silver Hawk, 100; Broadmoor, 151.
Ba—Ball.
BC—Ball and cone.
BJ—Ball joint.
Bu—Bushing.
CAS—Chrome alloy steel.
Chr—Chrysler.
Co—Coil.
CR—Cone and roller.
CS—Coil spring.
D—Direct.
Del—Delco.
DeS—De Soto.
Do—Dodge.
E—Elliot.
FG—Ford or Gabriel.
FMG—Ford, Monroe or Gabriel.
Gab—Gabriel.
Gir—Girling.
HAS—High alloy steel.
Hou—Houde.
Imp—Imperial.
ISK—Integral with steering knuckle.
L—Left.
Le—Leaf.
LL—Longitudinal leaf spring.
MG—Monroe or Gabriel.
Mon—Monroe.
N—Negative.
NA—Not available.
Ne—Needle.
P—Positive.
PK—Part of kingpin.
Pl—Plain.
Ply—Plymouth.
RE—Reverse Elliot.
Ro—Roller.
SE—Semi-elliptical.
SM—Oil impregnated, sintered metal bearings.
St—Steel.
Th—Threaded.
TR—Tapered roller.

For Directory of Car Manufacturers listed above, see Table of Contents

PASSENGER CARS \ 1957

BRITISH

MAKE AND MODEL	ENGINE: Number of Cylinders Bore and Stroke (In.)	ENGINE: Maximum Brake Hp. at Specified R.P.M.	ENGINE: Piston Displacement (Cu. In.)	ENGINE: Compression Ratio (To — 1)	ENGINE: Cylinder Arrangement	ENGINE: Valve Location	ENGINE: Piston Material	ENGINE: Camshaft Drive	GENERAL DATA: Wheelbase (In.)	GENERAL DATA: TREAD: Front (In.)	GENERAL DATA: TREAD: Rear (In.)	GENERAL DATA: OVERALL DIMENSIONS (In.): Length Including Bumpers and Bumper Guards	GENERAL DATA: OVERALL DIMENSIONS (In.): Width	GENERAL DATA: OVERALL DIMENSIONS (In.): Height—Road to Roof, No Load	GENERAL DATA: Tires (In.)	GENERAL DATA: Oil Pressure to—	GENERAL DATA: Carburetors—No. Used and Type	GENERAL DATA: Cooling System	GENERAL DATA: Shifting Method	GENERAL DATA: No. of Forward Speeds	REAR AXLE: Final Drive Type	REAR AXLE: Gear Ratio (To — 1)	REAR AXLE: Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
A.C. Ace	6-2.56x3.94	90-4500	121.5	8.00	IL	IH	....	....	90.0	50.0	50.0	151.5	59.5	59.0	5.50/16	....	3-	....	HS	4	Hy	3.64	....	FR	H	1720
Aceca	6-2.60x3.78	105-5000	121.5	9.50	IL	IH	....	....	90.0	50.0	50.0	160.0	61.0	52.0	5.50/16	....	3-	....	HS	4	Hy	3.64	....	FR	H	1970
Alvis T.C. 108/G	6-3.30x3.54	104-4000	182.6	8.00	IL	IH	AA	Ch	111.5	54.6	54.1	189.0	66.0	56.7	6.00/15	abce	2-Ho	Pu	HS	4	Hy	3.77	Sp	Fr	H	3136
Armstrong-Siddeley 346	6-3.54x3.54	125-4700	209.6	7.00	IL	IH	AA	Ch	114.0	56.6	57.5	193.0	72.0	63.0	6.70/16	abcde	1-Do	Pu	(1)	4	Hy	4.09	Sp	Fr	H	3472
Saloon	6-3.54x3.54	150-5000	209.6	7.00	IL	IH	AA	Ch	114.0	56.6	57.5	193.0	72.0	63.0	6.70/16	abcde	2-Do▲	Pu	(1)	4	Hy	4.09	Sp	Fr	H	3472
Limousine	6-3.54x3.54	125-4700	209.6	7.00	IL	IH	AA	Ch	132.0	56.6	57.5	212.0	72.0	68.0	7.00/16	abcde	1-Do	Pu	(1)	4	Hy	4.45	Sp	Fr	H	4032
234	4-3.54x3.54	120-5000	139.7	7.50	IL	IH	AA	Ch	111.0	55.1	54.3	180.0	66.5	61.8	6.40/15	abce	2-Do	Pu	HS	4	Hy	4.55	Sp	Fr	H	2912
236	6-2.76x3.94	85-4500	140.9	7.50	IL	IH	AA	Ch	111.0	55.1	54.3	180.0	66.5	61.8	6.40/15	abce	1-Do	Pu	HS	4	Hy	4.55	Sp	Fr	H	2912
Aston-Martin DB2-4MkII	6-3.27x3.54	140-5000	178.2	8.20	IL	IH	AA	Ch	99.0	54.0	54.0	171.5	65.0	53.5	6.00/16	abc	2-Ho	Pu	HS	5	Hy	3.77	Sp	Fr	H	2632
Austin A-35	4-2.48x3.00	34-4750	87.8	8.30	IL	IH	....	....	79.5	45.3	44.8	136.4	55.1	55.1	5.20/13	....	1-	....	HS	4	Hy	4.55	....	Fr	H	....
Princess IV	6-3.44x4.38	150-4100	244.0	8.30	IL	IH	....	....	121.8	48.5	60.0	201.0	73.0	65.8	6.50/16	....	2-	....	HS	4	Hy	4.09	....	Fr	H	4482
A-95	6-3.13x3.50	92-4500	161.0	8.30	IL	IH	....	....	105.8	51.5	51.3	180.8	64.0	62.0	6.40/15	....	1-	....	HS	4	Hy	4.11	....	Fr	H	....
A-95-Countryman	6-3.13x3.50	92-4500	161.0	8.30	IL	IH	....	....	105.8	51.5	51.3	180.8	64.0	62.0	6.70/15	....	1-	....	HS	4	Hy	4.11	....	Fr	H	....
A-50	4-2.88x3.50	51-4250	90.8	8.30	IL	IH	....	....	99.3	48.5	49.0	162.3	61.5	60.5	5.90/13	....	1-	....	HS	4	Hy	4.87	....	Fr	H	....
A-105	6-3.13x3.50	102-4900	161.0	8.30	IL	IH	....	....	105.8	51.5	51.3	180.8	64.0	62.0	6.40/15	....	2-	....	HS	4	Hy	4.11	....	Fr	H	....
Austin-Healey 100-6	6-3.13x3.50	102-4800	161.1	8.25	IL	IH	AA	Ch	92.0	48.8	50.0	157.5	60.5	49.0	5.90/15	abce	2-SH	Pu	HS	4	Hy	3.91	Sp	Fr	H	2300
100S	4-3.44x4.38	132-4700	182.2	8.30	IL	IH	AA	Ch	90.0	49.0	50.8	148.0	60.5	42.0	5.50/15	abce	2 St	Pu	HS	4	SB	2.92	Sp	Fr	H	1888
Bentley S Series Saloon	6-3.75x4.50	....	298.0	6.60	IL	F	AA	HG	123.0	58.0	60.0	212.0	74.0	64.0	8.20/15	abcde	2-SD	Pu	Au	4	Hy	3.42	Sp	Fr	HM	4145
Continental	6-3.75x4.50	....	298.0	8.10	IL	F	AA	HG	123.0	58.0	60.0	210.5	72.0	62.0	7.60/15	abcde	2-SD	Pu	Au	4	Hy	2.92	Sp	Fr	HM	3780
Citroen 2CV-A	2-2.44x2.44	9-3800	72.9	6.20	HO	IH	AA	SG	93.5	49.6	49.6	148.8	58.3	63.0	4.90/15	abce	1-SD	AC	HS	4	SB*	4.43*	Sp*	FR	H	1120
2CV-AZ	2-2.60x2.44	12-3500	75.9	7.00	HO	IH	AA	SG	93.5	49.6	49.6	148.8	58.3	63.0	4.90/15	abce	1-SD	AC	HS	4	SB	3.87	Sp*	FR	H	....
2 Litre DS-19	4-3.07x3.94	75-4500	117.0	7.50	IL	IH	AA	Ch	123.0	59.0	51.3	189.0	70.5	60.0	6.50/15	abce	1-DD	Pu	HS	4	SB*	3.89	RA	FR	H	2484
Daimler 104	6-3.25x4.25	137-4400	211.5	7.60	IL	IH	AA	Ch	114.0	56.0	57.0	193.0	71.0	62.5	6.50/16	abce	2-Ho	Pu	Pr	4	Hy	3.92	Sp	Fr	H	4032
Conquest Century	6-3.00x3.50	100-4400	148.4	7.75	IL	IH	AA	Ch	104.0	52.0	52.0	178.0	64.0	55.0	5.00/15	abce	2-Ho	Pu	Pr	4	Hy	3.73	Sp	Fr	MH	3024
Regina	6-3.75x4.25	167-4200	292.0	7.00	IL	IH	AA	Ch	130.0	60.0	63.0	217.0	74.0	72.0	7.50/16	abce	2-Ho	Pu	Pr	4	Hy	4.27	Sp	....	H	5120
Fairthorpe Atom I	1-2.48x3.15	11-5400	15.5	6.50	IL	IH	AA	SG	89.0	48.0	48.0	134.0	62.0	54.0	5.20/13	abce	1-St	AC	HS	3	Ch	7.98	RA	FR	H	890
Atom IIA	2-2.36x2.24	15-4800	19.6	....	IL	CC	AA	....	89.0	48.0	48.0	134.0	62.0	54.0	5.20/13	abce	1-St	AC	HS	3	Ch	6.96	RA	FR	H	842
Atom III	2-2.75x3.31	35-5750	39.6	6.50	IL	IH	AA	SG	89.0	48.0	48.0	134.0	62.0	54.0	5.20/13	abce	1-St	AC	HS	3	Ch	4.90	RA	FR	H	900
FWA	4-2.85x2.63	41-6500	67.0	9.80	IL	IH	AA	Ch	84.0	48.0	48.0	144.0	60.0	48.0	5.20/15	abc	2-St	Pu	HS	4	Hy	4.40	TA	Fr	H	1050
Ford Zephyr 206-E	6-3.25x3.13	90-4400	155.8	7.80	IL	IH	AS	Ch	107.0	53.0	52.0	178.5	68.9	62.0	6.40/13	abcde	1-Do	Pu	HS	3	Hy	3.90	Sp	Fr	H	2580
Consul 204-E	4-3.25x3.13	61-4400	103.9	7.80	IL	IH	AS	Ch	104.5	53.0	52.0	172.0	68.9	61.5	5.90/13	abcde	1-SD	Pu	HS	3	Hy	4.11	Sp	Fr	H	2401
Anglia	4-2.50x3.64	36-4500	71.6	7.00	IL	L	AS	Ch	87.0	48.0	47.5	149.8	60.8	58.8	5.20/13	abcde	1-SD	Pu	HS	3	SB	4.43	Sp	Fr	H	1631
Prefect	4-2.50x3.64	36-4500	71.6	7.00	IL	L	AS	Ch	87.0	48.0	47.5	151.3	60.8	58.8	5.20/13	abcde	1-SD	Pu	HS	3	SB	4.43	Sp	Fr	H	1683
Popular	4-2.50x3.64	30-4000	71.6	6.16	IL	L	AA	Ch	90.0	45.0	45.0	152.3	56.5	53.8	4.50/17	abcde	1-SD	TS	HS	3	SB	5.50	TT	N	M	1597
Zodiac 206-E	6-3.25x3.13	90-4400	155.8	7.80	IL	IH	AS	Ch	107.0	53.0	52.0	178.5	68.9	62.0	6.40/13	abcde	1-Do	Pu	HS	3	Hy	3.90	Sp	Fr	H	2627
Escort	4-2.50x3.64	36-4500	71.6	7.00	IL	L	AS	Ch	87.0	48.0	47.5	141.5	60.8	62.8	5.60/13	abcde	1-SD	Pu	HS	3	SB	4.43	Sp	Fr	H	1781
Squire	4-2.50x3.64	36-4500	71.6	7.00	IL	L	AS	Ch	87.0	48.0	47.5	141.8	60.8	62.8	5.60/13	abcde	1-SD	Pu	HS	3	SB	4.43	Sp	Fr	H	1816
Frazer-Nash Continental	6-2.84x2.96	....	148.0	7.20	V	IH	....	....	96.0	....	....	156.0	62.0	....	6.00/16	....	....	....	HS	....	....	3.50	....	FR	H	1848
Turismo	6-2.60x3.78	105-5750	120.0	....	IL	IH	....	....	98.0	48.0	50.0	156.0	62.0	51.0	5.50/16	....	3-	....	HS	4	SB	3.66	....	FR	H	1680
Sebring	6-2.60x3.78	140-5750	120.0	8.80	IL	IH	....	....	98.0	48.0	50.0	156.0	62.0	51.0	5.50/16	....	3-	....	HS	4	SB	3.66	....	FR	H	1680
Hillman Minx	4-3.00x3.00	51-4600	85.0	8.00	IL	IH	AA	Ch	98.0	49.0	48.5	160.5	60.5	59.5	5.60/15	abce	1-SD	Pu	HS	4	SB	4.78	Sp	Fr	H	2135
Husky	4-2.56x3.74	38-4100	77.2	6.63	IL	L	AA	Ch	84.0	48.6	48.5	148.5	62.0	61.0	5.00/15	abce	1-Do	Pu	HS	4	SB	4.78	Sp	Fr	H	1904
Estate Car	4-3.00x3.00	47-4400	85.0	7.00	IL	IH	AA	Ch	93.0	48.6	50.5	164.0	63.5	67.5	5.50/15	abce	1-SD	Pu	HS	4	SB	5.22	Sp	Fr	H	2259
Humber Hawk VI	4-3.19x4.33	75-4000	138.2	7.00	IL	IH	AA	Ch	105.5	56.0	57.0	181.5	72.0	64.8	6.40/15	abce	1-Do	Pu	HS	4	Hy	4.55	Sp	Fr	H	2989
Super Snipe	6-3.50x4.37	131-3800	252.6	7.36	IL	IH	AA	Ch	115.7	57.9	56.2	197.0	73.5	66.0	7.00/15	abcde	1-Do	Pu	HS	4	Hy	4.10	Sp	Fr	H	3950
Jaguar MKVIIM	6-3.27x4.17	190-5500	210.0	8.00	IL	IH	AT	Ch	120.0	56.5	58.0	196.5	73.0	63.0	6.70/16	abcde	2-SH	Pu	HA	4	Hy	4.27	Sp	Fr	H	3860
XK140 Sports	6-3.27x4.17	190-5500	210.0	8.00	IL	IH	AT	Ch	102.0	51.5	50.5	176.0	64.5	53.5	6.00/16	abcde	2-SH	Pu	HS	4	Hy	3.54	Sp	Fr	H	2830
XK140 Sports SE	6-3.27x4.17	210-5750	210.0	8.00	IL	IH	AT	Ch	102.0	51.0	51.4	176.0	64.5	53.5	6.00/16	abcde	2-SH	Pu	HS	4	Hy	3.54	Sp	Fr	H	2830
XK140 DH Coupe	6-3.27x4.17	190-5500	210.0	8.00	IL	IH	AT	Ch	102.0	51.5	50.5	176.0	64.5	55.0	6.00/16	abcde	2-SH	Pu	HA	4	Hy	3.54	Sp	Fr	H	3060
XK140 DH Coupe SE	6-3.27x4.17	210-5750	210.0	8.00	IL	IH	AT	Ch	102.0	51.0	51.4	176.0	64.5	55.0	6.00/16	abcde	2-SH	Pu	HA	4	Hy	3.54	Sp	Fr	H	3060
XK140 FH Coupe	6-3.27x4.17	190-5500	210.0	8.00	IL	IH	AT	Ch	102.0	51.5	50.5	176.0	64.5	55.0	6.00/16	abcde	2-SH	Pu	HA	4	Hy	3.54	Sp	Fr	H	2950
XK140 FH Coupe SE	6-3.27x4.17	210-5750	210.0	8.00	IL	IH	AT	Ch	102.0	51	51.4	176.0	64.0	55.0	6.00/16	abcde	2-SH	Pu	HA	4	Hy	3.54	Sp	Fr	H	2950
2.4 Litre	6-3.27x3.01	112-5750	151.5	8.00	IL	IH	AT	Ch	107.5	54.5	50.0	181.0	67.0	57.5	6.40/15	abce	2-SD	Pu	HS	4	Hy	4.55	TaS	Fr	H	3000
MKVIII	6-3.27x4.17	190-5500	210.0	8.00	IL	IH	AT	Ch	120.0	56.5	58.0	196.5	73.0	63.0	6.70/16	abcde	2-SH	Pu	HA	4	Hy	4.27	Sp	Fr	H	3860
Jensen Interceptor	6-3.43x4.37	130-4000	243.0	6.80	IL	IH	AA	Ch	112.0	54.0	57.0	188.0	66.0	58.0	6.00/16	abce	1-Do	Pu	HS	5	Hy	3.77	Sp	Fr	H	2800
541	6-3.43x4.37	130-3800	243.4	6.80	IL	IH	AA	Ch	105.0	52.0	52.0	174.0	63.0	53.0	6.00/16	abce	3-SU	TP	HS	4	Hy	3.31	Sp	Fr	H	2500
Kieft FWA	4-2.85x2.63	82-6400	67.0	8.80	IL	IH	AA	Ch	90.0	50.5	50.5	151.0	55.0	38.0	5.00/15	abc	2-St	Pu	HS	4	Hy	4.30	....	FR	M	1178
Lagonda 3 Litre Coupe	6-3.27x3.54	140-5000	178.2	8.20	IL	IH	AA	Ch	113.5	56.8	56.8	196.0	69.5	62.0	6.00/16	abc	2-Ho	Pu	HS	4	Hy	4.56	TT	FR	H	3556
3 Litre Saloon	6-3.27x3.54	140-5000	178.3	8.20	IL	IH	AA	Ch	113.5	56.8	56.8	196.0	69.5	62.0	6.00/16	abc	2-Ho	Pu	HS	4	Hy	4.56	TT	FR	H	3696
Lea-Francis 18 HP	4-3.35x4.33	95-4000	163.0	7.20	IL	IH	AA	Ch	111.0	52.1	52.4	184.0	64.0	60.5	6.00/16	abce	1-St	Pu	HS	4	Hy	3.91	Sp	Fr	H	3024
Sports 2½ Litre	4-3.35x4.33	125-5000	163.0	8.00	IL	IH	AA	Ch	99.0	52.1	52.4	168.0	62.0	52.0	6.00/16	abce	2-St	Pu	HS	4	Hy	3.64	Sp	Fr	H	2576
14 HP	4-2.95x3.94	70-4700	106.0	7.25	IL	IH	AA	Ch	111.0	52.1	52.4	184.0	64.0	60.5	6.00/16	abce	1-St	Pu	HS	4	Hy	4.88	Sp	Fr	H	2828
14 HP Estate Car	4-2.95x3.94	65-4700	106.0	7.25	IL	IH	AA	Ch	111.0	52.1	52.4	184.0	64.0	64.0	6.00/16	abce	1-St	Pu	HS	4	Hy	4.88	Sp	Fr	H	2828
MG Magnette ZB	4-2.88x3.50	60-4800	90.8	7.15	IL	IH	AA	Ch	102.0	51.0	51.0	169.0	63.0	58.0	5.50/15	abce	2-SSd	Pu	HS	4	Hy	4.88	Sp	Fr	H	2400
Series A	4-2.88x3.50	68-5500	90.9	8.15	IL	IH	AA	Ch	94.0	47.9	48.8	156.0	58.0	50.0	5.00/15	abce	2-SSd	Pu	HS	4	Hy	4.30	Sp	Fr	H	1960

For abbreviations, see page 139

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OTHER FOREIGN CARS

MAKE AND MODEL	ENGINE: Number of Cylinders Bore and Stroke (In.)	ENGINE: Maximum Brake Hp. at Specified R.P.M.	ENGINE: Piston Displacement (Cu. In.)	ENGINE: Compression Ratio (To —1)	ENGINE: Cylinder Arrangement	ENGINE: Valve Location	ENGINE: Piston Material	ENGINE: Camshaft Drive	GENERAL DATA: Wheelbase (In.)	GENERAL DATA: Tread: Front (In.)	GENERAL DATA: Tread: Rear (In.)	GENERAL DATA: Overall Dimensions (In.): Length Including Bumpers and Bumper Guards	GENERAL DATA: Overall Dimensions (In.): Width	GENERAL DATA: Overall Dimensions (In.): Height—Road to Roof, No Load	GENERAL DATA: Tires (In.)	GENERAL DATA: Oil Pressure to—	GENERAL DATA: Carburetors—No. Used and Type	GENERAL DATA: Cooling System	GENERAL DATA: Shifting Method	GENERAL DATA: No. of Forward Speeds	REAR AXLE: Final Drive	REAR AXLE: Gear Ratio (To —1)	REAR AXLE: Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
BRITISH—*continued*																										
Morgan Plus 4	4-3.35x3.62	68-4200	127.6	6.70	IL	IH	AA	Ch	96.0	47.0	47.0	144.0	56.0	52.5	5.25/16	abcde	1-Do	Pu	HS	4	Hy	3.72	Sp	Fr	H	1700
Plus 4TR	4-3.27x3.62	95-4800	121.5	8.50	IL	IH	AA	Ch	96.0	47.0	47.0	144.0	56.0	52 5	5.25/16	abcde	2-St	Pu	HS	4	Hy	3.72	Sp	Fr	H	1700
4/4 Series 2	4-2.50x3.94	36-4400	71.6	7.00	IL	L	AA	Ch	98.0	47.0	47.0	144.0	56.0	50 0	5.00/16	abce	1-Do	TP	HS	3	Hy	4.44	Sp	Fr	H	1430
Morris Oxford Series III	4-2.88x3.50	50-4200	90.9	7.43	IL	IH	AA	Ch	97.0	53.5	53.0	170.0	65.0	63.0	5.50/15	abce	1-SSd	Pu	HS	4	Hy	4.88	Sp	Fr	H	2340
Minor 1000	4-2.48x3.00	37-4800	57.8	8.30	IL	IH	AA	Ch	86.0	50.6	50.3	148.0	61.1	60.0	5.00/14	abce	1-SSd	Pu	HS	4	Hy	4.55	Sp	Fr	H	1706
Cowley Series II	4-2.88x3.50	50-4200	90.9	7.20	IL	IH	AA	Ch	97.0	53.5	53.0	169.0	65.0	63.0	5.60/15	abce	1-Sd	Pu	HS	4	Hy	4.88	Sp	Fr	H	2305
Isis Series II	6-3.13x3.50	86-4250	161.0	7.30	IL	IH	AA	Ch	107.5	53.6	53.5	178.0	65.0	63.8	6.00/15	abce	1-Sd	Pu	HS	4	Hy	4.10	Sp	....	H	2844
Riley Pathfinder	4-3.17x4.73	110-4500	149.0	7.25	IL	IH	AA	Ch	113.5	54.0	54.5	183.0	67.0	66.0	6.00/16	abce	2-SH	Pu	HS	4	Hy	4.10	TA	Fr	H	3412
Rolls-Royce Silver Cloud	6-3.75x4.45	.....	298.0	6.60	IL	F	AA	HG	123.0	58.0	60.0	212 0	74.8	64.0	8.20/15	abcde	2-DD	Pu	Au	4	Hy	3.42	Sp	Fr	HM	4368
Silver Wraith	6-3.75x4.45	.....	298.0	6.60	IL	F	AA	HG	133.0	58.0	64.0	(11)	(11)	(11)	7.50/16	abcd	2-DD	Pu	Au	4	Hy	4.25	Sp	Fr	HM	(11)
Rover 75	6-2.88x3.50	80-4500	136.0	7.20	IL	F	AA	Ch	111.0	52.0	51.5	178.2	65.6	63.7	6.00/15	abce	1-SH	Pu	HS	4	SB	4.30	Sp	Fr	H	3198
60	4-3.06x4.13	60-4000	121.8	6.90	IL	F	AA	Ch	111.0	52.0	51.5	178.2	65.6	63.7	6.00/15	abce	1-SH	Pu	HS	4	SB	4.30	Sp	Fr	H	3047
90	6-2.88x4.13	93-4500	160.9	7.50	IL	F	AA	Ch	111.0	52.0	51.5	178.2	65.6	63.7	6.00/15	abce	1-SH	Pu	HS	4	SB	4.30	Sp	Fr	H	3203
105R	6-2.88x4.13	108-4250	160.9	8.50	IL	F	AA	Ch	111.0	52.0	51.5	178.2	65.6	63.7	6.00/15	abce	2-SD	Pu	Au	2	SB	4.70	Sp	Fr	M	3338
105S	6-2.88x4.13	108-4250	160.9	8.50	IL	F	AA	Ch	111.0	52.0	51.5	178.2	65.6	63.7	6.00/15	abce	2-SD	Pu	HS	4	SB	4.30	Sp	Fr	M	3265
Singer Gazelle Saloon	4-2.87x3.52	53-4500	91.5	7.50	IL	IH	AA	Ch	96.0	49.0	48.5	163.5	60.8	59.5	5.60/15	abc	1-SD	Pu	HS	4	SB	4.78	....	Fr	H	2235
Gazelle Convertible	4-2.87x3.52	53-4500	91.5	7.50	IL	IH	AA	Ch	96.0	49.0	48.5	163.5	60.8	58.0	5.60/15	abc	1-SD	Pu	HS	4	SB	4.78	....	Fr	H	2265
Standard Vanguard	4-3.35x3.62	68-4200	127.6	7.50	IL	IH	AA	Ch	102.0	51.0	51.0	172.0	67.5	61.5	5.90/15	abcde	1-SD	Pu	HS	3	Hy	4.30	Sp	Fr	H	2562
Eight	4-2.28x2.99	30-4500	49.0	7.50	IL	IH	AA	Ch	84.0	48.5	48.5	142.0	58.0	60 0	5.20/13	abce	1-SD	Pu	HS	4	Hy	4.88	Sp	Fr	H	1596
Ten	4-2.48x2.99	35-4500	57.8	7.50	IL	IH	AA	Ch	84.0	48.5	48.5	145.0	58.0	60.0	5.60/13	abce	1-SD	Pu	HS	4	Hy	4.55	Sp	Fr	H	1617
Sportsman	4-3.35x3.62	90-4500	127.6	8.00	IL	IH	AA	Ch	102.0	51.0	51.0	173.5	67.5	61.5	5.90/15	abcde	2-St	Pu	HS	3	Hy	4.55	Sp	Fr	H	2688
Sunbeam MK III	4-3.19x4.33	86-4400	138.2	7.50	IL	IH	AA	Ch	97.5	47.5	50.5	168.0	62.5	60.8	5.50/16	abce	1-Do	Pu	HS	4	Hy	(3)	Sp	Fr	H	2926
Rapier	4-3.00x3.00	67-5400	85.0	8.00	IL	IH	AA	Ch	96.0	49.0	48.5	160.5	60.8	58.0	5.60/15	abce	2-SD	Pu	HS	4	SB	5.22	Sp	Fr	H	2290
Triumph Sports	4-3.27x3.62	100-5000	121.5	8.50	IL	IH	AA	Ch	88.0	45.0	45.5	151.0	55.5	50.0	5.50/15	abcde	2-Ho	Pu	HS	4	Hy	3.70	Sp	Fr	H	2009
Vauxhall Wyvern	4-3.13x3.00	46-4000	92.0	6 80	IL	IH	AA	Ch	103.0	53.2	54.5	170.8	66.6	63.5	5.60/15	abce	1-Do	Pu	HS	3	Hy	4.62	Sp	Fr	H	2275
Wyvern	4-3.13x3.00	48-4000	92.0	7.70	IL	IH	AA	Ch	103.0	53.2	54.5	170.8	66 6	63 5	5.60/15	abce	1-Do	Pu	HS	3	Hy	4.62	Sp	Fr	H	2275
Velox	6-3.13x3.00	66-4000	138 0	6 80	IL	IH	AA	Ch	103.0	53.2	54.5	172.1	66.6	63.5	5.90/15	abce	1-Do	Pu	HS	3	Hy	4.12	Sp	Fr	H	2415
Velox	6-3.13x3.00	68-4000	138 0	7.70	IL	IH	AA	Ch	103.0	53.2	54.5	172.1	66.6	63.5	5.90/15	abce	1-Do	Pu	HS	3	Hy	4.12	Sp	Fr	H	2415
Cresta	6-3.13x3.00	66-4000	138 0	6 80	IL	IH	AA	Ch	103.0	53.2	54.5	172.1	66.6	63.5	5.90/15	abce	1-Do	Pu	HS	3	Hy	4.12	Sp	Fr	H	2455
Cresta	6-3.13x3.00	68-4000	138 0	7.70	IL	IH	AA	Ch	103.0	53.2	54.5	172.1	66.6	63.5	5.90/15	abce	1-Do	Pu	HS	3	Hy	4.12	Sp	Fr	H	2455
Wolseley 15-50	4-2.88x3.50	50-4200	91.0	7.20	IL	IH	AA	Ch	102 0	50.6	51.0	173 0	61.0	60 0	5.60/15	abce	1-Sd	Pu	HS	4	Hy	4.88	Sp	Fr	H	2500
6-90 Series II	6-3.13x3.50	95-4500	161.0	7.30	IL	IH	AA	Ch	113.5	54.4	54.5	188.0	67.0	62 0	6.00/15	abce	2-SH	Pu	HS	4	Hy	4.10	TA	Fr	H	3248
AUSTRALIA																										
Holden Standard FE	6-3.00x3.12	70-4000	132.5	6.80	IL	IH	AA	HG	105 0	54.5	54.5	175.9	66.8	60.9	6.40/13	abce	1-	Pu	HS	3	Hy	3.88	Sp	Fr	H	2379
Special FE	6-3.00x3.12	70-4000	132.5	6.80	IL	IH	AA	HG	105.0	54.5	54.5	175.9	66.8	60.9	6.40/13	abce	1-	Pu	HS	3	Hy	3.88	Sp	Fr	H	2393
AUSTRIA																										
Steyr-Daimler-Puch 2000	4-2.50x2.59	86-4800	122.0	7.50	IL	IH	AA	....	104.3	52.2	52.4	170.5	65.3	62.6	6.40/14	.....	1-	Pu	HS	5	Hy	4.63	....	FR	H	3640
CZECHOSLOVAKIA																										
Skoda S-440	4-2.68x2.98	40-4200	66.5	7.00	IL	IH	AA	Ch	94.5	47.6	49 3	160.5	63.0	56.4	5.50/15	abce	1-Do	Pu	HS	4	SB	4.78	TF	FR	H	1970
S-1201	4-2.84x2.96	45-4400	74.4	7.00	IL	IH	AA	Ch	105.8	49.3	52.0	177.2	66.5	59.8	6.00/15	abce	1-Do	Pu	HS	4	SB	5.25	TF	FR	H	2284
T603	8-2.95x2.84	100-4800	155.5	6.50	V	IH	AA	Ch	106.4	55.4	55.4	199.0	74.0	60 0	6.50/15	ace	2-Do	Pu	HS	4	SB	4.70	Sp	FR	H	3180
FRANCE																										
Bugatti 101	8-2.82x3.94	200-5500	199.0	8.50	IL	IH	AA	HG	130.0	53.2	53.2	212.4	65.0	65.0	6.00/17	abcde	1-DD	Pu	HS	4	SB	.....	TA	N	H	....
Citroen 2CVAZ	2-2.60x2.44	12-3500	25.9	6.25	HO	IH	AA	HG	94.5	49.6	49.6	149.0	58.3	63.0	4.90/15	abce	1-Do	AC	HS	4	SB	4.84	....	FR	H	1078
11B Normale	4-3.07x3.94	65-4000	116.5	6.80	IL	IH	AS	Ch	121.8	58.9	58.0	183.1	70.5	70.5	6.50/15	abce	2-SD	Pu	HS	3	SB	3.45	....	Fr	H	2462
11B Familiale	4-3.07x3.94	65-4000	116.5	6.80	IL	IH	AS	Ch	126.7	58.9	58.0	191.0	70.5	70.5	7.25/15	abce	2-SD	Pu	HS	3	SB	3.45	....	Fr	H	2598
11BL Legere	4-3.07x3.94	65-4000	116.5	6.80	IL	IH	AS	Ch	114 6	54.1	53.3	175.2	66.7	59.9	6.50/15	abce	1-SD	Pu	HS	3	SB	3.45	....	Fr	H	2347
11D	4-3.07x3.94	65-4000	116.5	6.80	IL	IH	AS	Ch	123.0	59.1	51.2	189.0	70.5	58.0	(12)	abcde	3-SD	Pu	HS	4	SB	3.89	....	FR	H	2410
DS19	4-3.07x3.94	75-4500	116.5	7.50	IL	T	AS	....	123.2	59.1	51.4	189.0	70.5	58.0	(12)	abce	1-DD	Pu	....	4	SB	3.89	....	FR	H	2468
Facel Vega FVS	.....	250-	.....	.....	V	IH	.....	.....	103 0	54.0	54.0	179.0	69.0	52.0	6.70/15	.....	1-DF	....	HS	4	Hy	3.31	....	Fr	H	3500
Excellence	.....	250-	.....	.....	V	IH	.....	.....	122.0	54.0	55.0	204.0	69.0	52.0	7.10/15	.....	1-DF	....	HS	4	Hy	3.31	....	Fr	H	4070
Panhard Cabriolet	2-1.78x2.85	42-5000	14.2	7.25	HO	....	AA	....	83 9	44.7	44.7	145.7	59.1	51.2	5.70/15	.....	1-DD	AC	HS	4	.....	.....	.....	FR	H	....
Dyna 57	2-1.78x2.85	42-5000	14.2	7.25	HO	IH	AA	....	101.4	51.2	51.2	179.9	63.0	57.1	5.70/15	.....	1-DD	AC	HS	4	.....	.....	.....	FR	H	....
Peugeot 203	4-2.98x2.68	45-4500	78.7	7.45	IL	IH	AA	Ch	101.8	53.2	52.0	177.0	63.5	61.5	6.00/15	.....	1-De	Pu	HS	4	We	5.75	TT	Fr	H	1980
403	4-3.15x2.68	56-4900	89.5	8.58	IL	IH	AA	Ch	104.8	52.8	52.0	176.4	65.8	57.9	6.50/15	.....	1-De	Pu	HS	4	We	5.75	TT	Fr	H	2248

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OTHER FOREIGN CARS—*continued*

MAKE AND MODEL	ENGINE								GENERAL DATA												REAR AXLE					
										TREAD		OVERALL DIMENSIONS (In.)														
	Number of Cylinders Bore and Stroke (In.)	Maximum Brake Hp. at Specified R.P.M.	Piston Displacement (Cu. In.)	Compression Ratio (To – 1)	Cylinder Arrangement	Valve Location	Piston Material	Camshaft Drive	Wheelbase (In.)	Front (In.)	Rear (In.)	Length Including Bumpers and Bumper Guards	Width	Height—Road to Roof, No Load	Tires (In.)	Oil Pressure to—	Carburetors—No. Used and Type	Cooling System	Shifting Method	No. of Forward Speeds	Final Drive Type	Gear Ratio (To – 1)	Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
FRANCE—*continued*																										
Renault R1062 Series	4-2.15x3.15	26-4300	45.6	7.25	IL	IH	AS	HG	82.7	47.9	48.0	143.2	56.3	57.9	5.00/15	abce	1-De	Pu	HS	3	SB	4.71	...	FR	H	1257
R-1102	4-2.35x3.46	74-4000	121.8	7.00	IL	IH	AS	HG	110.2	55.1	55.1	185.0	67.7	63.0	6.40/15	abce	1-De	Pu	HS	4	Hy	3.89	TA	FR	H	2800
R-1062, U.S.A.	4-2.15x3.15	26-4500	45.6	7.25	IL	IH	AS	HG	82.7	47.9	48.0	143.2	56.3	57.9	5.00/15	abce	1-De	Pu	HS	3	SB	4.71	...	FR	H	1257
R-1103	4-3.46x3.46	77-4000	130.7	7.00	IL	IH	AS	HG	110.2	55.1	55.1	185.0	67.7	63.0	6.40/15	abce	1-De	Pu	HS	4	Hy	3.89	TA	FR	H	2866
R-1090	4-2.28x3.15	30-4250	51.5	7.25	IL	IH	AS	HG	89.8	49.3	48.0	156.6	60.0	56.8	5.00/15	abce	1-SD	Pu	HS	3	SB	4.37	...	FR	H	1340
Revin 3CVCD4	2-2.76x2.36	13-3200	28.2	...	HO	...	...	...	71.0	38.6	38.6	124.0	45.3	49.3	3.50/10	...	1-SU	...	HS	3	...	...	Sp	FR	M	...
Simca Elysee-1300	4-2.91x2.95	48-4500	78.7	6.75	IL	IH	AA	Ch	96.2	49.4	49.2	162.0	61.3	59.0	5.60/14	abc	1-SD	Pu	HS	4	Hy	4.44	Sp	Fr	H	2009
Plein Ciel-1300	4-2.91x2.95	57-4800	78.7	7.85	IL	IH	AA	Ch	96.2	49.4	49.2	168.0	61.8	56.0	5.60/14	abc	1-SD	Pu	HS	4	Hy	4.44	Sp	Fr	H	2030
Vedette-72A	8-2.60x3.37	80-4400	143.5	7.20	V	L	AS	SG	106.0	54.0	53.0	178.0	69.1	58.3	6.40/13	abc	1-DD	Pu	HS	3	Hy	3.90	Sp	Fr	H	2454
Vedette-72C	8-2.60x3.37	80-4400	143.5	7.20	V	L	AS	SG	106.0	54.0	53.0	178.0	69.1	58.3	6.40/13	abc	1-DD	Pu	HS	3	Hy	4.55	Sp	Fr	H	2454
Talbot Tourisme Rapide	4-3.52x3.90	120-	...	7.60	...	...	...	...	98.5	51.2	51.2	165.5	64.6	52.7	...	...	2-Dt	...	...	4	...	...	...	Fr	H	2320
Lago	4-3.53x3.90	120-5000	152.0	7.00	IL	IH	AA	Ch	98.5	51.2	51.2	165.1	64.6	51.6	6.50/15	abcd	2-Dt	Pu	HS	4	SB	3.36	TT	Fr	H	2310
GERMANY																										
BMW 503	8-3.23x2.95	140-4800	193.0	7.30	V	IH	AA	Ch	111.6	55.0	55.9	186.5	68.0	55.0	6.00/16	abcde	2-DD	Pu	HS	4	Hy	3.90	TA	Fr	H	3120
507	8-3.23x2.95	150-5000	193.0	7.60	V	IH	AA	Ch	97.5	57.0	56.2	172.0	65.0	50.0	6.00/16	abcde	2-DD	Pu	HS	4	Hy	3.70	TA	Fr	H	2600
Borgward																										
Hansa 2400 Pullman	6-3.07x3.21	100-	142.6	8.00	IL	IH	AA	HG	111.0	53.5	56.0	189.5	70.1	58.8	6.70/15	...	1-	Pu	HA	4	Hy	3.90	...	FR	H	3316
Isabella	4-2.95x3.33	60-4700	91.1	6.80	IL	IH	AA	HG	102.4	52.5	53.5	172.8	67.1	57.7	5.90/13	abcd	1-DS	Pu	HS	4	Hy	3.90	Sp	FR	H	
Isabella TS	4-2.95x3.33	75-	91.0	8.20	IL	IH	AA	BG	102.4	53.7	53.5	173.0	67.2	57.7	5.90/13	abcd	1-	Pu	HS	4	Hy	3.90	...	FR	M	2205
DKW 3-6	3-2.80x2.99	40-4200	54.7	...	IL	N	AA	N	92.0	50.0	53.0	166.0	66.0	57.5	5.60/15	N	1-De	TS	HS	4	StB	4.72	...	FR	H	1700
Ford Taunus 12M	4-2.50x3.64	43-4250	71.5	6.60	IL	L	AS	HG	98.0	48.0	48.0	160.0	62.2	61.0	5.60/13	abce	1-SD	Pu	HS	3	...	4.44	Sp	Fr	H	1810
15M	4-3.23x2.79	60-4500	81.7	7.00	IL	IH	AS	HG	98.0	48.0	48.0	160.0	62.2	61.0	5.60/13	abce	1-SD	Pu	HS	3	Hy	4.11	Sp	Fr	H	1904
Goliath GP900E	2-3.30x3.06	40-4000	55.0	7.70	IL	...	AA	...	91.0	51.2	49.2	157.0	64.0	58.0	5.60/13	...	...	Pu	HS	4	...	4.73	Sp	Fr	H	1875
Lloyd LP400S, LS400S	2-2.44x2.52	13-3250	23.5	6.85	IL	N	AA	N	78.7	41.3	43.3	135.8	55.3	55.1	4.25/15	N	1-St	AC	HS	3	StB	4.82	Sp	FR	H	1003
LP600, LS600, LC600	2-2.28x1.88	19-4500	36.4	6.60	IL	IH	AA	Ch	78.8	41.4	43.3	132.1	55.6	55.2	4.25/15	a	1-De	AC	HS	3	...	4.50	Sp	FR	H	1100
LT600	2-2.28x1.88	19-4500	36.4	6.60	IL	IH	AA	Ch	92.6	47.3	47.3	139.0	60.8	63.8	5.00/15	a	1-De	AC	HS	3	...	4.87	Sp	FR	H	1320
Mercedes-Benz 180	4-2.95x3.94	68-4000	107.8	6.70	IL	L	AA	Ch	104.3	56.1	57.5	175.6	68.5	61.4	6.40/13	abcde	1-De	Pu	HS	4	Hy	3.90	TA	FR	H	2380
180D	4-2.95x3.94	46-3500	107.8	19.00	IL	IH	AA	Ch	104.3	56.1	57.5	175.6	68.5	61.4	6.40/13	abcde	Inj	Pu	HS	4	Hy	3.70	TA		H	2470
190	4-3.34x3.30	84-4800	115.7	7.50	IL	IH	AA	Ch	104.3	56.3	57.9	178.6	68.5	61.4	6.40/13	abcde	1-De	Pu	HS	4	Hy	4.10	TA	FR	H	2450
190SL	4-3.34x3.30	120-5800	115.7	8.50	IL	IH	AA	Ch	94.5	56.3	57.9	166.0	68.5	52.0	6.40/13	abcde	2-	Pu	HS	4	Hy	3.90	TA	FR	...	2340
219	6-3.16x2.86	92-4800	134.0	7.60	IL	IH	AA	Ch	108.3	56.3	57.9	183.1	68.5	61.4	6.40/13	abcde	1-De	Pu	HS	4	Hy	4.10	TA	FR	H	2580
220S	6-3.16x2.86	112-5000	134.0	7.60	IL	IH	AA	Ch	111.0	56.3	57.9	185.6	68.5	61.4	6.70/13	abcde	2-De	Pu	HS	4	Hy	4.10	TA	FR	...	2730
300C	6-3.34x3.47	136-4500	183.0	7.40	IL	IH	AA	Ch	120.0	58.3	60.0	199.0	72.4	63.0	7.60/15	abcde	2-	Pu	Au	3	Hy	4.67	TA	FR	...	3960
300S	6-3.34x3.47	200-5500	183.0	8.55	IL	IH	AA	Ch	114.2	58.3	60.0	185.0	75.4	56.5	6.50/15	abcde	Inj	Pu	HS	4	Hy	4.11	TA	FR	H	3650
300SL	6-3.34x3.47	240-6100	183.0	8.55	IL	IH	AA	Ch	94.5	54.5	56.5	178.0	70.5	51.2	6.50/15	abcde	Inj	Pu	HS	4	Hy	3.64	TA	FR	H	2550
Opel Olympia, Rekord	4-3.15x2.91	51-4200	90.8	6.90	IL	IH	AS	HG	97.9	47.2	49.9	167.1	64.0	60.2	5.60/13	abcde	1-De	Pu	HS	3	Hy	3.90	Sp	Fr	...	1907
Caravan	4-3.15x2.91	51-4200	90.8	6.90	IL	IH	AS	HG	97.9	47.4	49.9	168.5	64.0	62.8	6.40/13	abcde	1-De	Pu	HS	3	Hy	4.22	Sp	Fr	H	2072
Kapitan	6-3.15x3.23	81-4000	150.9	7.10	IL	IH	AS	...	108.3	54.0	54.0	146.4	69.3	61.4	6.40/13	abcde	1-De	Pu	HS	3	Hy	3.90	Sp	Fr	H	2568
Porsche 356A/1600	4-3.25x2.92	60-4500	98.5	7.50	HO	IH	AA	HG	82.7	50.8	...	155.5	66.0	51.0	5.00/16	abc	2-SD	AC	HS	4	SB	4.37	TA	FR	H	1870
356/1500	4-3.35x2.60	100-6200	91.5	9.00	HO	IH	AA	VS	82.7	51.5	...	155.5	66.0	51.0	5.90/15	ab	2-DD	AC	HS	...	SB	...	TA	FR	H	1870
Volkswagen 1/11	4-3.03x2.52	36-3700	72.7	6.60	HO	IH	AS	HG	94.5	50.8	49.2	160.2	60.6	59.1	5.60/15	abc	1-SD	AC	HS	4	SB	4.40	TA	FR	■	1530
2/22	4-3.03x2.52	36-3700	72.7	6.60	HO	IH	AS	HG	94.5	53.9	53.5	165.0	68.0	76.5	6.40/15	abc	1-SD	AC	HS	4	SDR	6.20	TA	FR	H	2370
1/14	4-3.03x2.52	36-3700	72.7	6.60	HO	IH	AS	HG	94.5	50.8	49.2	163.0	64.2	52.2	5.60/15	abc	1-SD	AC	HS	4	SB	4.40	TA	FR	H	1720
ITALY																										
Alfa-Romeo 1900/AR 52	4-3.25x3.48	65-4400	114.9	7.00	IL	IH	AA	Ch	86.6	51.1	51.1	138.5	58.2	71.6	6.40/16	abce	1-SD	Pu	HS	8	SB	4.10	Sp	Fr	H	2870
Giulietta Sprint	4-2.95x2.95	65-6000	78.7	8.00	IL	IH	AA	Ch	93.7	50.0	50.0	153.5	60.6	51.2	6.10/15	abcde	1-DD	Pu	HS	4	Hy	4.55	TT	Fr	H	1764
1900 Super	4-3.33x3.46	90-5200	120.5	7.50	IL	IH	AA	Ch	103.5	52.0	52.0	174.8	63.0	58.7	6.50/15	abcde	1-SU	Pu	HS	4	Hy	4.10	TT	Fr	H	2513
1900 C Super Sprint	4-3.33x3.46	115-5500	120.5	8.00	IL	IH	AA	Ch	98.4	51.3	51.3	176.2	63.4	52.2	6.50/15	abcde	2-DD	Pu	HS	5	Hy	4.55	TT	Fr	H	2205
1900 TI Super	4-3.33x3.46	115-5500	120.5	8.00	IL	IH	AA	Ch	103.5	52.0	52.0	174.8	63.0	58.7	6.50/15	abcde	2-DD	Pu	HS	4	Hy	4.10	TT	Fr	H	2513
Giulietta Sedan	4-2.92x2.96	50-5200	78.6	7.50	IL	IH	AA	Ch	93.8	50.4	50.4	157.2	61.3	55.4	6.10/15	abcde	1-SD	Pu	HS	4	Hy	4.55	TT	Fr	H	1937
Giulietta Spider	4-2.92x2.96	65-6000	78.6	8.00	IL	IH	AA	Ch	86.6	50.0	50.0	150.5	61.1	52.4	6.10/15	abcde	1-DD	Pu	HS	4	Hy	4.55	TT	Fr	H	1760
1300 Super Spider	4-2.92x2.96	90-6000	78.7	9.00	IL	IH	AA	Ch	86.6	50.7	50.0	152.0	62.3	52.5	6.10/15	abce	2-DD	Pu	HS	4	Hy	4.10	TT	Fr	H	
1300 Sprint Veloce	4-2.92x2.96	90-6000	78.7	9.00	IL	IH	AA	Ch	93.7	50.7	50.0	157.0	60.5	52.0	6.10/15	abce	2-DD	Pu	HS	4	Hy	4.10	TT	Fr	H	1730
1900 Primevere	4-3.32x3.47	90-4800	120.5	7.50	IL	IH	AA	Ch	103.5	52.0	52.0	173.2	63.0	58.7	6.50/15	abce	1-SD	Pu	HS	4	Hy	4.10	...	Fr	H	2410
Ferrari 500 Mondial	4-3.54x3.07	170-7000	121.1	9.50	IL	IH	...	...	88.5	50.3	50.6	...	...	...	(6)	...	2-Dt	Pu	HS	5	...	...	...	Fr	H	1543
250 G-T	12-2.87x2.31	220-7000	180.1	9.00	V	IH	...	Ch	102.4	52.2	52.0	...	...	...	6.00/16	...	3-	Pu	...	4	...	...	...	...	H	...
410 SA	12-3.46x2.68	335-6000	302.3	9.00	V	IH	AA	Ch	110.4	57.3	57.1	198.7	67.0	67.0	6.50/16	abc	3-Dt	Pu	HS	4	Wo	(15)	...	Fr	MH	2420
Fiat 1100	4-2.68x2.96	40-4400	66.5	7.00	IL	IH	AA	Ch	92.1	48.4	47.7	148.0	57.7	58.5	5.20/14	abc	1-SD	Pu	HS	4	Hy	4.30	Sp	Fr	H	1835
1100TV	4-2.68x2.96	53-5200	66.5	8.00	IL	IH	AA	Ch	92.1	48.4	47.7	148.6	57.4	58.5	5.20/14	abc	1-DD	Pu	HS	4	Hy	4.30	Sp	Fr	H	1860
1400B	4-3.23x2.60	58-4600	85.0	7.50	IL	IH	AA	Ch	104.3	52.2	52.0	169.5	65.2	62.0	5.90/14	abc	1-DD	Pu	HS	4	Hy	4.45	TA	Fr	H	2480
1400B Diesel	4-3.23x3.54	43-3200	116.0	20.00	IL	IH	AA	HG	104.3	52.4	52.2	169.5	65.2	62.6	6.40/14	abc	Inj	Pu	HS	4	Hy	4.10	TA	Fr	H	2820

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OTHER FOREIGN CARS—*concluded*

MAKE AND MODEL	ENGINE: Number of Cylinders Bore and Stroke (In.)	ENGINE: Maximum Brake Hp. at Specified R.P.M.	ENGINE: Piston Displacement (Cu. In.)	ENGINE: Compression Ratio (To – 1)	ENGINE: Cylinder Arrangement	ENGINE: Valve Location	ENGINE: Piston Material	ENGINE: Camshaft Drive	GENERAL DATA: Wheelbase (In.)	GENERAL DATA: TREAD Front (In.)	GENERAL DATA: TREAD Rear (In.)	GENERAL DATA: OVERALL DIMENSIONS (In.) Length Including Bumpers and Bumper Guards	GENERAL DATA: OVERALL DIMENSIONS (In.) Width	GENERAL DATA: OVERALL DIMENSIONS (In.) Height—Road to Roof, No Load	GENERAL DATA: Tires (In.)	GENERAL DATA: Oil Pressure to—	GENERAL DATA: Carburetors—No. Used and Type	GENERAL DATA: Cooling System	GENERAL DATA: Shifting Method	GENERAL DATA: No. of Forward Speeds	REAR AXLE: Final Drive	REAR AXLE: Gear Ratio (To – 1)	REAR AXLE: Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
ITALY—*continued*																										
Fiat (cont'd)																										
1900B	4-3.23x3.54	80-4000	116.0	7.50	IL	IH	AA	Ch	104.3	52.4	52.2	169.5	65.2	62.6	6.40/14	abc	1-DD	Pu	HS	5	Hy	4.30	TA	Fr	H	2640
1100 Family Car	4-2.68x2.95	40-4400	66.5	7.00	IL	IH	AA	Ch	92.1	48.4	47.7	148.0	57.7	59.0	5.60/14	abc	1-SD	Pu	HS	4	Hy	4.30	Sp	Fr	H	1870
600	4-2.36x2.20	22-4600	38.8	7.00	IL	IH	AA	Ch	78.7	45.2	45.4	126.6	54.3	55.3	5.20/12	abc	1-SD	Pu	HS	4	SB	5.27	...	FR	H	1230
600 Multipla	4-2.36x2.20	22-4600	38.8	7.00	IL	IH	AA	Ch	...	...	...	...	...	...	5.20/12	abc	1-...	Pu	HS	4	...	6.45	...	FR	H	1540
600 Taxi	4-2.36x2.20	22-4600	38.8	7.00	IL	IH	AA	Ch	...	...	...	...	...	...	5.20/12	abc	1-...	Pu	HS	4	...	6.45	...	FR	H	1605
Iso Isetta	1-1.89x2.60	10-4500	7.3	6.50	IL	N	AA	N	59.1	47.2	19.7	88.6	52.8	52.0	4.50/10	N	1-St	AC	HS	4	Ch	...	Sp	Fr	H	726
Lancia C10 Appia	4-2.68x2.95	44-4800	66.5	7.20	V	IH	AA	Ch	98.8	46.4	46.5	158.0	57.0	57.3	5.60/15	abce	1-St	Pu	HS	4	Hy	5.22	...	Fr	H	1690
Flaminia	6-3.15x3.21	98-4800	150.0	8.00	V	...	...	...	113.0	54.8	54.0	...	...	...	...	...	...	...	...	...	...	3.90	...	...	...	...
Aurelia GT2500	6-3.07x3.37	110-5000	149.9	8.40	V	IH	AA	Ch	104.3	50.1	51.2	172.0	61.0	53.5	6.50/15	abce	1-Dt	Pu	HS	4	SB	4.27	...	Fr	H	2535
Conv't Aurelia GT2500	6-3.07x3.36	110-5000	149.4	8.40	V	IH	AA	Ch	96.4	50.8	48.2	166.5	61.2	...	6.50/15	abce	1-DD	Pu	HS	4	SB	4.27	TTs	Fr	H	2330
C10 Appia	4-2.68x2.96	38-4800	66.5	7.40	V	IH	AA	Ch	97.6	46.5	46.6	152.0	56.0	56.1	5.60/15	abce	1-St	Pu	HS	4	Hy	4.55	...	Fr	H	1805
Maserti A6G/2000	6-3.01x2.83	125-6000	121.0	8.50	IL	IH	AA	Ch	100.4	53.5	48.0	164.0	60.0	51.0	6.00/16	abce	3-...	Pu	Pr	4	SB	4.75	TT	Fr	H	1850
200S1	4-3.62x2.96	180-7200	121.5	9.50	IL	IH	AA	HG	86.5	49.3	47.3	165.0	57.0	31.0	6.00/16	abce	2-Dt	Pu	Pr	4	Hy	Var	TT	...	H	...
250/F	6-3.31x2.95	270-7200	152.1	12.00	IL	IH	AA	HG	89.0	51.2	49.2	156.0	55.0	39.0	(8)	abc	3-Dt	Pu	Pr	5	SbR	Var	TT	Fr	H	1400
150/S	4-3.11x2.76	140-7500	90.5	8.75	IL	IH	AA	HG	86.7	49.3	47.3	145.0	57.0	30.0	(7)	abcde	2-Dt	Pu	Pr	4	Hy	Var	TT	FR	H	1400
300/S	6-3.31x3.54	260-6200	82.5	8.75	IL	IH	AA	HG	91.0	51.3	49.3	167.0	59.0	33.0	(17)	abcde	3-Dt	Pu	Pr	4	DR	Var	TT	FR	H	1600
450S	8-3.70x3.19	400-7000	274.0	9.00	V	IH	AA	HG	94.5	52.5	51.5	172.0	62.0	40.0	(2)	abce	4-Dt	Pu	Pr	5	DR	Var	TT	FR	H	...
O.S.C.A. 1100/2AD	4-2.76x2.80	92-6600	66.6	9.00	IL	IH	AA	Ch	86.6	47.2	45.3	140.0	57.0	41.0	5.00/15	abc	2-DH	Pu	HS	4	SB	Var	...	Fr	H	1609
1500/2AD	4-3.07x3.07	125-6300	90.9	9.50	IL	IH	AA	Ch	86.6	47.2	45.3	140.0	57.0	41.0	(9)	abc	2-DH	Pu	HS	4	SB	Var	...	Fr	H	1653
2000S	6-2.99x2.87	165-6500	121.2	9.00	IL	IH	AA	Ch	88.6	49.6	47.6	149.0	58.0	39.5	(6)	abc	3-DH	Pu	HS	4	SB	Var	...	FR	H	1918
187	4-2.44x2.44	70-7500	45.7	9.00	IL	IH	AA	Ch	82.6	45.2	44.5	150.0	54.3	30.0	5.20/14	abc	2-DH	Pu	HS	4	SB	Var	Sp	Fr	H	1439
JAPAN																										
Nissan Datsun 113	4-2.36x2.99	24-4000	52.5	6.50	IL	L	AA	HG	87.4	46.6	46.5	152.0	57.7	60.6	5.00/15	ce	1-SD	Pu	HS	4	Hy	6.43	Sp	N	H	1880
Toyopet Crown RS	4-3.03x3.07	55-4400	88.5	7.20	IL	IH	AA	HG	99.6	52.2	53.9	168.7	66.1	60.0	6.40/15	abce	1-SD	Pu	HS	3	Hy	5.29	Sp	Fr	H	2530
SPAIN																										
Pegaso 102B/2.8	8-3.14x2.76	...-6300	171.5	Var	V	IH	AA	HG	92.0	52.0	50.8	162.0	63.0	51.0	6.00/16	abc	(10)	Pu	HS	5	SB	Var	Sp	Fr	H	2183
102BS/2.8	8-3.14x2.76	250-6600	171.5	Var	V	IH	AA	HG	92.0	52.0	50.8	162.0	63.0	51.0	6.50/16	abc	1-DH	Pu	HS	5	SB	Var	Sp	Fr	H	2340
102B/3.2	8-3.35x2.72	200-6000	193.9	Var	V	IH	AA	HG	92.0	52.0	50.8	162.0	63.0	51.0	6.50/16	abc	2-FB	Pu	HS	5	SB	Var	Sp	Fr	H	2183
102BSS/3.2	8-3.35x2.72	370-6000	193.9	Var	V	IH	AA	HG	92.0	52.0	50.8	162.0	63.0	51.0	6.50/16	abc	4-DH	Pu	HS	5	SB	Var	Sp	Fr	H	2340
Z-103	8-3.46x3.25	270-5800	244.7	8.00	V	IH	AA	Ch	92.2	52.8	50.8	162.0	63.0	50.8	6.50/16	abc	(18)	Pu	HS	5	SB	3.58	...	Fr	H	3199
S.E.A.T. 1400	4-3.23x2.60	44-4400	85.1	6.70	IL	IH	AA	Ch	104.3	52.2	52.0	169.5	65.2	62.6	5.90/14	abce	1-DF	Pu	HS	4	Hy	4.44	Sp	Fr	H	2360
SWEDEN																										
SAAB 92B	2-3.15x2.99	26-4000	46.8	6.60	IL	N	AA	N	87.2	46.4	46.4	155.5	53.7	57.0	5.00/15	N	1-SD	TS	HS	3	HG	5.35	...	FR	H	1725
93	3-2.80x2.88	38-5000	45.6	7.30	IL	N	AA	N	98.4	48.0	48.0	157.1	61.5	57.1	5.00/15	N	1-St	...	HS	3	HG	5.13	...	FR	H	1734
Volvo PV-444 Std.	4-3.13x3.15	60-4500	98.0	7.40	IL	IH	AA	HG	102.3	51.0	51.8	177.0	62.0	62.0	5.90/15	abc	1-SD	Pu	HS	3	Hy	4.56	TA	Fr	H	2100
PV-444 Export	4-3.13x3.15	80-5500	98.0	8.20	IL	IH	AA	HG	102.3	51.0	51.8	...	62.0	66.0	5.90/15	abc	2-SU	Pu	HS	3	Hy	4.36	TA	Fr	H	2100
PV-445 Std.	4-3.13x3.15	60-4500	98.0	7.40	IL	IH	AA	HG	102.3	51.0	51.8	174.0	63.0	66.0	6.00/15	abc	1-SD	Pu	HS	3	Hy	5.63	Sp	Fr	H	2350
PV-445 Export	4-3.13x3.15	80-5500	98.0	8.20	IL	IH	AA	HG	102.3	51.0	51.8	174.0	63.0	66.0	6.00/15	abc	2-SU	Pu	HS	3	Hy	5.63	Sp	Fr	H	2350
Amazon Std.	4-3.13x3.15	60-4500	98.0	7.40	IL	IH	AA	HG	102.3	51.8	51.8	173.0	63.5	59.5	5.90/15	abc	1-SD	Pu	HS	3	Hy	4.56	TA	Fr	H	2170
Amazon Export	4-3.13x3.15	80-5500	98.0	8.20	IL	IH	AA	HG	102.3	51.8	51.8	173.0	63.5	59.5	5.90/15	abc	2-SU	Pu	HS	3	Hy	4.56	TA	Fr	H	2170

ABBREVIATIONS

▲—Four barrel carburetor optional.
•—Front wheel drive.
■—Mechanical or hydraulic.
(1)—Fully automatic, preselective or hand shift optional.
(2)—Front, 6.00/16; rear, 7.00/16.
(3)—3.90 with std. trans. and 4.22 with overdrive.
(6)—Front, 5.25/16; rear, 6.00/16.
(7)—Front, 5.25/16; rear, 5.50/16.
(8)—Front, 5.50/16; rear, 7.00/16.
(9)—Front, 5.25/15; rear, 5.90/15.
(10)—One or four dual downdrafts.
(11)—Varies with different body styles.
(12)—Front, 6.50/15; rear, 6.00/15.
(15)—Three optional gear ratios available.
(17)—Front, 6.00/16; rear, 6.50/16.
(18)—One dual downdraft or two four barrel.
a—Main bearings.
b—Connecting rod bearings.
c—Camshaft bearings.
d—Piston pins.
e—Timing chain or gears.
AA—Aluminum alloy.
AC—Air cooled.
AS—Aluminum alloy and steel strut.
AT—Alloy tinplated.
Au—Automatic.
BG—Bevel gear.
CC—Crankcase.
Ch—Chain.
CH—Chain and helical gear.
DD—Dual downdraft.
DF—Downdraft, four barrel.
DH—Dual horizontal.
Do—Downdraft.
DR—Double reduction.
Dt—Dual throat.
F—Valves in side and head.
FB—Four barrel.
Fr—Front.
FR—Front and rear.
H—Hydraulic.
HA—Hand shift or automatic.
HG—Helical gear.
HM—Front, hydraulic; rear, mechanical.
Ho—Horizontal.
HO—Horizontally opposed.
HS—Hand shift.
Hy—Hypoid.
IH—In head.
IL—In line.
Inj—Injectors.
L—Valves at side.
M—Mechanical.
MH—Mechanical and hydraulic.
N—No or none.
NA—Not available.
Pr—Preselective.
Pu—Pump.
RA—Radius arms.
SB—Spiral bevel.
SbR—Straight bevel, double reduction.
Sd—Semi-downdraft.
SD—Single throat downdraft.
SDR—Spiral bevel, double reduction.
SG—Spur gear.
SH—Single throat, horizontal.
Sp—Springs.
SSd—Single throat, semi-downdraft.
St—Single throat.
StB—Straight bevel.
SU—Single throat, updraft.
T—"T" head, valves opposite.
TA—Torque arm.
TaS—Torque arms and springs.
TF—Torque forks.
TP—Thermo-syphon and pump.
TS—Thermo-syphon.
TT—Torque tube.
TTs—Torque tube and springs.
V—"V" type.
Var—Various.
VS—Vertical shaft.
Wo—Worm.

For Directory of the Car Manufacturers listed above, see Table of Contents

1957 / TRUCKS

SPECIFICATIONS

KEY TO DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost. If it differs from the standard size. Dual rears are understood; exceptions noted

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO ABBREVIATIONS

MAKES—ALL
BC—Brockway
Continental.
BL—Brown-Lipe.
Bu or Bud—Buda.
Chev—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
DC—Diamond T
Continental.
Eat—Eaton.
Fu—Fuller.
GMC—General Motors.
Her—Hercules.
HS—Hall-Scott.
Int.—International.
LeR—Le Rol.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Spi—Spicer.
T or Tim—Timken-
Detroit Axle Co.
WG—Warner Gear.
Wau—Waukesha.
Wh—White.

REAR AXLE
Final Drive and Type
B—Bevel.
CD—Chain Drive.
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
½—Semi-Floating.
REAR RATIOS
(**)—Only one ratio.
DRIVE AND TORQUE
H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods.

KEY TO REFERENCES

c.f.—Cab Forward design.
.o.e.—Cab-Over-Engine design.
l.c.f.—Low cab forward design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Ford or Chevrolet Models.
(R)—Remanufactured Fords.
^—Denotes "Includes Cab" when used with weights or prices.

AVAILABLE
*****—Conventional or C.O.E. available.
•—Two or three speed auxiliary transmission available.
^—Two speed rear axle available.

CHEVROLET
▾—Includes spare wheel, full fuel tank and cooling system.
‡—Trademaster V-8 engine available.
‡‡—Taskmaster V-8 engine available.
††—5-speed transmission available.
▾▾—Powermatic available.
¶—Overdrive optional.
^—7/17.5 D optional.
ǂ—7.17 8F available.
ǂ—Synchro-mesh 3-speed H.D. optional.
¢—4-speed synchro-mesh transmission optional.
□□—Two-speed rear axle available.
ǂ—Hydramatic available.
‡—4.11 available with optional overdrive.
■—4.11 available with optional overdrive; 3.36 available with optional automatic transmission.
#—6.17 available.
■■—Spicer H. D. 5-speed transmission available.
††—V-8 Turbo-Fire 265 or Turbo-Fire 283 engines available.
‡‡—Powerglide or Turboglide optional.
▾—V-8 Super Taskmaster 283 optional.
▾—V-8 Super Loadmaster 322 optional.
▾—Includes full fuel tank and cooling system.
§§—Includes spare tire, full fuel tank and cooling system.

COLEMAN
*****—11.00/22 also available.
■—Fu5A65 or Spicer 6352 also available.
†—Cum HRB600 also available with horsepower of 165–1800.

DODGE
*****—18000 with 217 in. wheelbase.
^—371 with two-speed axle.

DUPLEX
‡—Torque Divider, Timken T70-2 speed.

FABCO
*****—With 2-speed transfer case.
RC—Chevrolet axle remanufactured.
RF—Ford axle remanufactured.

FEDERAL
*****—Also available with tandem rear axle.

FORD
*****—212 hp engine available.
†—181 hp engine available.
‡—178 hp HD engine available on F500, F600, F700 models.
ǂ—196 hp engine available.
^—Two speed rear axles available at extra cost.

FWD
†—Transport tractors with one man cab beside the engine.
^—23 PT rear axle is a driving axle plus a trailing axle.
*****—Model available in c.o.e.

KENWORTH
ǂǂ—Timken TK-500 PA Trailing Axle.
†—14.00/24, front; 16.00/24, rear.
‡—Optional transmission.
•—C.O.E. optional.
*****—One man cab.
^—Torque converter plus Torquematic transmission optional.
ǂ—Both C.O.E. and cab beside engine optional.
††—14.00/24 front; 18.00/25 rear.
******—Cummins NHRBSID 600.
‡‡—Allison TCL 654 plus TG 607.
▾—1148.
ǂ—1108.

OSHKOSH
^—Includes cab.
■—1091 cu. in.
°°—Hydraulic coupling optional.
^—Dependent upon engine.

REO
ǂ—Model 331-OA and 331-OA LPG engines can be furnished.
ǂ—Two speed axle available.
‡—Model 255-OA-LPG or 292-OA engine can be furnished.
ǂ—OH-170 or OH-160 LPG engine can be furnished.
■—OH-160 LPG engine can be furnished
▾—Model OV-235 or OV-220-LPG engine can be furnished.

STUDEBAKER
*****—Two speed 5.93–8.10 or 6.48–8.86 optional.
^—Two speed 6.16–8.48 or 6.61–9.09 optional.

TRUCKSTELL
ǂǂ—With 3 speed power divider.
ǂ—Weight with cab and maximum tires.

WARD LA FRANCE
‡—Available with optional rear axles.
^^—Available with 11.00/22 or 12.00/20 tires for G.V.W. of 60,000 lbs and optional front and rear axles.
ǂǂ—Auxiliary transmission, Fuller 3A65, 3B65, 3A92 and 3B92.

WILLYS
*****—Complete vehicle-Pickup Type body.
‡—Three speed transmission, 2 speed transfer case.

1957 TRUCK SPECIFICATIONS

MAKE AND MODEL	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear: Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Available	*200 Opt	Opt	16500	^8700	7.00/20D	8.25/20	Wau 195GL	6-3⅞x4	265	6.2	220	78-2800	Fu 5A33•	5	Tim E100DH△	HF	H	•• -6.20
	*225 Opt	Opt	17500	^8400	7.50/20D	8.25/20	Wau 195GK	6-4⅛x4	320	6.2	245	103-2800	Fu 5A33•	5	Tim E100DH△	HF	H	•• -6.20
	*250 Opt	Opt	20000	^8600	8.25/20D	9.00/20	Wau 195GK	6-4⅛x4	320	6.2	245	103-2800	Fu 5A33•	5	Tim H100DH△	HF	R	•• -6.17
	*400 Opt	Opt	23000	^7000	9.00/20D	10.00/20	Wau 195GK	6-4⅛x4	320	6.2	245	103-2800	Fu 5A33•	5	Tim L100DH△	HF	R	•• -6.17
	*500 Opt	Opt	24000	^7700	9.00/20D	10.00/20	Wau 135GK	6-4⅛x5	426	6.3	330	150-2800	Fu 5A43•	5	Tim L100DH△	HF	R	•• -6.17
	*550 Opt	Opt	26000	^8300	10.00/20D	11.00/20	Wau 135GK	6-4⅛x5	426	6.3	330	150-2800	Fu 5A43•	5	Tim Q100DH△	HF	R	•• -6.17
	*560 Opt	Opt	27000	^8830	10.00/20D	11.00/24	Wau 135GZ	6-4⅝x5	451	6.3	350	155-2800	Fu 5A62•	5	Tim R100DH△	HF	R	•• -6.83
	*600 Opt	Opt	28000	*10200	10.00/20D	11.00/24	Wau 140GK	6-4½x5½	525	6.4	405	188-2800	Fu 5A62•	5	Tim R100P△	HF	R	•• -6.83
	*610 Opt	Opt	29000	*10900	10.00/20D	11.00/24	Wau 145GK	6-5¼x6	779	6.2	600	230-2200	Spi 8051A•	5	Tim R100P△	HF	R	•• -6.83
(D)	*620 Opt	Opt	29000	*11200	10.00/20D	11.00/24	Cum NHB	6-5¼x6	743	17.0	535	200-2100	Spi 8051A•	5	Tim R100P△	HF	R	•• -5.29
(D)	*630 Opt	Opt	40000	*11900	12.00/20D	12.00/24	Cum NHB	6-5¼x6	743	17.0	535	200-2100	Spi 8051A•	5	Tim U200P△	2F	R	•• -7.03
Brockway	128WX 135	183	23000	6700	9.00/20	9.00/20	BC 408	6-4x4½	330	6.7	258	125-3000	Fuller	5		HF	R	6.80-7.20
	147WL 135	205	28000	7400	9.00/20	10.00/20	BC 418D	6-4x4½	363	6.7	293	150-3200	Fuller	5		HF	R	6.17-7.80
	148WD 135	205	30000	8300	10.00/20	11.00/20	BC 428D	6-4⅛x4⅞	427	6.5	352	165-3000	Fuller	5		HF	R	6.17-7.80
	153WD 141	221	36000	9400	11.00/20	11.00/22	BC 428D	6-4⅛x4⅞	427	6.5	352	165-3000	Fuller	5		2F	R	5.91-7.79
	260LD 141	209	38000	11000	11.00/22	12.00/24	BC 468D	6-4½x5½	513	6.2	412	200-2800	Fuller	5		2F	R	6.38-7.79
	260WLD 141	209	38000	11100	11.00/22	12.00/24	BC 489D	6-4⅝x5⅝	572	6.3	484	230-2800	Fuller	5		2F	R	6.38-7.79
(T)	147W 135	156	45000	7100	9.00/20	10.00/20	BC 418D	6-4x4½	363	6.7	293	150-3200	Fuller	5		HF	H	5.29-7.80
(T)	155W 135	156	55000	8000	10.00/20	11.00/20	BC 428D	6-4⅛x4⅞	427	6.5	352	165-3000	Fuller	5		2F	H	5.43-6.71
(T)	254W 144	163	60000	9450	10.00/22	11.00/22	BC 468D	6-4½x5½	513	6.2	412	200-2800	Fuller	5		2F	H	5.43-6.71
(T)	255W 144	163	65000	9700	10.00/22	11.00/22	BC 489D	6-4⅝x5⅝	572	6.3	484	230-2800	Fuller	5		2F	H	5.54-7.09
(T)	256W 137	156	60000	9500	10.00/22	11.00/22	BC 466FD	6-4½x5½	513	6.2	412	200-2800	Fuller	5		2F	H	5.43-6.71
(T)	258W 137	156	65000	9750	10.00/22	11.00/22	BC 487FD	6-4⅝x5⅝	572	6.3	484	230-2800	Fuller	5		2F	H	4.77-7.09
(T)	260WD 141	161	65000	10500	11.00/22	11.00/24	BC 489D	6-4⅝x5⅝	572	6.3	484	230-2800	Fuller	5		2F	R	6.16-6.71
Chevrolet	D-57 115		4100	§§3285	7.50/14S	7.50/14S	O-Bl. Fl. 140††	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own ¶‡‡	3	Own	H½	H	• -3.55
	3A57 114		5000	§§2488	6.70/15S	7/17.5S	O-Th. Mas.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own §¶¢♦	3	Own	H½	H	‡ -3.90
	3B57 123½		5000	§§3465	6.70/15S	7/17.5S	O-Th. Mas.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own §¶¢♦	3	Own	H½	H	‡ -3.90
(C.F.)	3C57 104		10000	▽2837	8/19.5S	8/19.5	O-Th. Mas. Sp.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own §¢♦	3	Own	HF	H	•• -5.14
(C.F.)	3D57 125		10000	▽2894	8/19.5S	8/19.5	O-Th. Mas. Sp.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own §¢♦	3	Own	HF	H	•• -5.14
(C.F.)	3F57 137		10000	▽2914	8/19.5S	8/19.5	O-Th. Mas. Sp.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own §¢♦	3	Own	HF	H	•• -5.14
	3E57 123½		6900	▽2894	7/17.5S	8/19.5△	O-Th. Mas.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own §¢♦	3	Own	HF	H	•• -4.57
	3G57 135		8800	▽3104	8/17.5S	8/19.5	O-Th. Mas.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own §♦	4	Own	HF	H	•• -5.14
	4A57 132½		14000	▽3925	7/22.5D	8/22.5	O-Th. Mas.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own ♦	4	Own	HF	H	□□ -6.17
	4B57 156½		14000	▽4046	7/22.5D	8/22.5	O-Th. Mas.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own ♦	4	Own	HF	H	□□ -6.17
(L.C.F.)	5D57 112½		15000	▽▲4404	8/22.5D	9/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(L.C.F.)	5E57 136½		15000	▽▲4501	8/22.5D	9/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(L.C.F.)	5F57 150½		15000	▽▲4586	8/22.5D	9/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6F57 132½		15000	▽4329	8/22.5D	9/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6G57 156½		15000	▽4399	8/22.5D	9/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6H57 174½		15000	▽4565	8/22.5D	9/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(L.C.F.)	5A57 112½		19000	▽▲4404	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(L.C.F.)	5B57 136½		19000	▽▲4501	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(L.C.F.)	5C57 160½		19000	▽▲4586	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6A57 132½		19000	▽4329	8/22.5D	10/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6B57 156½		19000	▽4399	8/22.5D	10/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6C57 174½		19000	▽4565	8/22.5D	10/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(L.C.F.)	5G57 112½		21000	▽▲4479	10/22.5D	10/22.5	O-Tak. Mas.‡	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▲	4	Own	HF	H	□□+ -7.20
(L.C.F.)	5H57 136½		21000	▽▲4576	10/22.5D	10/22.5	O-Tak. Mas.‡	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(L.C.F.)	5J57 160½		21000	▽▲4661	10/22.5D	10/22.5	O-Tak. Mas.‡	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6L57 132½		21000	▽4404	10/22.5D	10/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6M57 156½		21000	▽4474	10/22.5D	10/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
	6N57 174½		21000	▽4640	10/22.5D	10/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(C.F.)	6J57 129½		18000	▽4105	8/22.5D	9/22.5	O-Job Mas.	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own	4	Own	HF	H	□+ -7.20
(C.F.)	6K57 153½		18300	▽4177	8/22.5D	9/22.5	O-Job Mas.	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own	4	Own	HF	H	□+ -7.20
(Sc. Bus Ch.)	4C57 156½		12000	▽4337	7/22.5D	8/22.5	O-Th. Mas.‡	6-3⅞x3½‡‡	236	8.0	210	140-4200	Own	4	Own	HF	H	•• -6.17
(Sc. Bus Ch.)	6D57 198½		18000	▽4870	8/22.5D	10/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(Sc. Bus Ch.)	6E57 222½		18000	▽4985	8/22.5D	10/22.5	O-Job Mas.♣♣	6-3⅞x3½‡‡	261	7.8	232	148-4000	Own ♦▽▽	4	Own	HF	H	□□+ -7.20
(Sc. Bus Ch.)	6F57 240		20000	▽5712	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□ -7.20
(Sc. Bus Ch.)	10F57 240		22000	▽5976	9/22.5D	10/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Own	HF	H	‡ -7.20
(L.C.F.)	7A57 112½		22000	▽▲4910	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□‡+ -7.20
(L.C.F.)	7B57 124½		22000	▽▲4904	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□‡+ -7.20
(L.C.F.)	7C57 172½		22000	▽▲5259	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□‡+ -7.20
	8A57 132½		22000	▽▲4838	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□‡+ -7.20
	8B57 144½		22000	▽▲4898	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□‡+ -7.20
	8C57 156½		22000	▽▲4977	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□‡+ -7.20
	8D57 174½		22000	▽▲5094	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□‡+ -7.20
	8E57 192½		22000	▽▲5216	8/22.5D	10/22.5	O-Tak. Mas.▽	6-3⅞x3	283	8.0	270	160-4200	Own ♦▽▽	4	Own	HF	H	□□‡+ -7.20
(L.C.F.)	9A57 112½		25000	▽▲5555	9/22.5D	11/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Eaton	HF	H	□□ -7.17
(L.C.F.)	9B57 124½		25000	▽▲5629	9/22.5D	11/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Eaton	HF	H	□□ -7.17
(L.C.F.)	9C57 172½		25000	▽▲5895	9/22.5D	11/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Eaton	HF	H	□□ -7.17
	10A57 132½		25000	▽▲5538	9/22.5D	11/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Eaton	HF	H	□□ -7.17
	10B57 144½		25000	▽▲5623	9/22.5D	11/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Eaton	HF	H	□□ -7.17
	10C57 156½		25000	▽▲5615	9/22.5D	11/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Eaton	HF	H	□□ -7.17
	10D57 174½		25000	▽▲5764	9/22.5D	11/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Eaton	HF	H	□□ -7.17
	10E57 192½		25000	▽▲5884	9/22.5D	11/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Eaton	HF	H	□□ -7.17
(H. D. Tan.)	10C57 156½		32000	▽▲7621	8/22.5D	10/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Own	HF	H	•• -7.20
(H. D. Tan.)	10D57 174½		32000	▽▲7711	8/22.5D	10/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Own	HF	H	•• -7.20
(H. D. Tan.)	10E57 192½		32000	▽▲7831	8/22.5D	10/22.5	O-Ld. Mas.◇	6-4x3½	322	7.7	310	195-4000	NP ▬▽▽	5	Own	HF	H	•• -7.20
Diamond T	431 130	190	19000	5600	7.50/20	8.25/20	Own XL264	6-3½x4½	264		234	140-3800	WG T98	4	Tim E100			•• -.....
	430C 99	159	20000	6000	7.50/20	8.25/20	Own XL264	6-3½x4½	264		234	140-3800	WG T98	4	Tim E100			•• -.....
	531 130	220	21000	6100	8.25/20D	9.00/20	Own XL308	6-3½x4½	308		280	150-3600	X33	5	Tim H100			•• -.....
	530C 99	189	22000	6300	8.25/20D	9.00/20	Own XL 308	6-3½x4½	308		280	150-3600	X33	5	Tim H140			•• -.....
	532 133	157	18000	7400	9.00/20D	10.00/22	Own XL372	6-4⅝x4½	372		308	155-2850	Cla 292VO	5	Tim H100			•• -.....
	630 133	211	25000	7700	9.00/20	10.00/20	Own XL406	6-4⅝x4½	406		338	175-3200	Cla 291V	5	Eat 1790			•• -.....
	630C 99	189	25000	7850	9.00/20	10.00/20	Own XL406	6-4⅝x4½	406		338	175-3200	Cla 291V	5	Eat 1790			•• -.....
	660 133	157	17700	8050	9.00/20	10.00/22	Con T6427	6-4⅞x4⅞	427		350	164-2700	Cla 292VO	5	Eat 1790			•• -.....
	662 133	157	22000	8200	9.00/20	11.00/20	Own XL460	6-4⅝x5	451		388	182-3000	Cla 292VO	5	Eat 1793			•• -.....
	720 133	211	29500	9050	9.00/20	11.00/20	Con T6427	6-4⅞x4⅞	427		350	164-2700	Cla 290V	5	Eat 18803			.....
	720C 99	159	30000	8500	9.00/20	11.00/20	Con T6427	6-4⅞x4⅞	427		350	164-2700	Cla 290V	5	Eat 18803			.....

For references and abbreviations see page 140

For Directory of the Truck Manufacturers listed above, see Table of Contents

• TRUCKS •

1957 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL-BASE		Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear)		ENGINE DETAILS						TRANSMISSION		REAR AXLE			
	Minimum Standard	Maximum Standard			Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Divco																		
11	101	....	7500	2825	7.00/16	7.50/16	Own	4-3 7/16x4 5/8	162	6.0	....	47-2800	....	4	....	F	....	....
12	101	....	8000	2865	7.00/16	7.00/16	Own	4-3 7/16x4 5/8	162	6.0	....	47-2800	....	3	....	F	....	** -6.8
13	101	....	7300	2940	7.00/16	7.50/16	Own	4-3 7/16x4 5/8	162	6.0	....	47-2800	....	4	....	F	....	** -5.14
18	101	....	7800	2995	7.00/16	7.50/16	Own	6-3 7/16x4 1/2	230	6.5	....	75-2800	....	4	....	F	....	** -5.14
334	115	....	10800	....	†	†	Own 6	6-3 7/16x4 1/2	230	6.5	....	75-2800	WG T9	4	Own	SF	H	** -5.14
344	115	....	7500	....	††	††	Own 6	6-3 7/16x4 1/2	230	6.5	....	75-2800	WG T87	3	Own	HF	H	** -5.57
364	115	....	6500	....	7.00/16	7.50/16	Own Super 4	4-3 7/16x4 5/8	162	6.2	....	55-2900	WG T87	3	Own	HF	H	** -5.57
374	115	....	9500	....	‡	‡	Own 6	6-3 7/16x4 1/2	230	6.5	....	75-2800	WG T9	4	Own	SF	H	** -5.14
214	127	....	12000	....	6.50/20	7.00/20	Own 6	6-3 7/16x4 1/2	230	6.5	....	75-2800	WG T9	4	Own	SF	H	** -6.80
224	127	....	8000	....	††	7.50/16	Own 6	6-6 7/16x4 1/2	230	6.5	....	75-2800	WG T87	3	Own	SF	H	** -5.14
244	127	....	7500	....	††	7.50/16	Own Super 4	4-3 7/16x4 5/8	162	6.2	....	55-2900	WG T87	3	Own	SF	H	** -5.14
42	130	....	7000	....	7.50/16	7.50/16	Own Super 6	6-3 1/2x4 5/8	252	7.6	220	130-3700	WG T98	4	Own	HF	H	** -4.88
52	117	....	7000	....	7.50/16	7.50/16	Own Super 6	6-3 1/2x4 5/8	252	7.6	220	130-3700	WG T98	4	Own	HF	H	** -4.88
41	130	....	16500	....	‡‡	‡‡	Own Super 6	6-3 1/2x4 5/8	252	7.6	220	130-3700	WG T98	4	Own	HF	H	** -7.2
51	117	....	16500	....	‡‡	‡‡	Own Super 6	6-3 1/2x4 5/8	252	7.6	220	130-3700	WG T98	4	Own	HF	H	** -7.2
Dodge																		
K8-D100	108	118	6100	2380	6.70/15S	7.10/15S	Own T-534	6-3.25x4.5	230	7.9	202	120-3600	Own PC	3	Own T-534	H½	H	3.73-4.89
K8-D100	108	118	6100	2450	6.70/15S	7.10/15S	Own VT-534	8-3.63x3.8	315	8.5	290	204-4400	Own PC	3	Own VT-534	H½	H	3.73-4.89
K8-D200	116	116	7500	2825	7.17.5S	7/17.5D	Own T-536	6-3.25x4.5	230	7.9	202	120-3600	NP 8990S	3	Own T-536	HF	H	4.1-4.89
K8-D200	116	116	7500	2925	7.17.5S	7/17.5D	Own VT-536	8-3.63x3.8	315	8.5	290	204-4400	NP 8990S	3	Own VT-536	HF	H	4.1-4.89
K8-D300	126	126	8800	2850	7.17.5S	7/17.5D	Own T-538	6-3.25x4.5	230	7.9	202	120-3600	NP 8990S	3	Own T-538	HF	H	4.1-4.89
K8-D300	126	126	8800	2950	7.17.5S	7/17.5D	Own VT-538	8-3.63x3.8	315	8.5	290	204-4400	NP 8990S	3	Own VT-538	HF	H	4.1-4.89
K8-D400	129	171	15000	3875	7.22.5D	9/22.5D	Own T-542	6-3.43x4.5	251	7.1	216	125-3600	NP 420	4	Own T-542	HF	H	6.29-6.83
K8-D400	129	171	15000	3950	7.22.5D	9/22.5D	Own VT-542	8-3.63x3.8	315	7.5	284	197-4400	NP 420	4	Own VT-542	HF	H	6.29-6.83
K8-D500	129	193	18000	4275	8.22.5D	9/22.5D	Own T-544	6-3.43x4.5	251	7.1	216	125-3600	NP 420	4	Own T-544	HF	H	6.29-6.83
K8-D500	129	193	18000	4350	8.22.5D	9/22.5D	Own VT-544	8-3.63x3.8	315	7.5	284	197-4400	NP 420	4	Own VT-544	HF	H	6.29-6.83
K8-D600	129	193	21000	4925	8.22.5D	10/22.5D	Own T-546	6-3.43x4.5	265	7.1	228	130-3600	NP 420	4	Eat 1614	HF	H	6.5-7.17
K8-D600	129	193	21000	5000	8.22.5D	10/22.5D	Own VT-546	8-3.63x3.8	315	7.5	284	197-4400	NP 420	4	Eat 1614	HF	H	6.5-7.17
K8-D700	129	171	23000	5200	9.22.5D	10/22.5D	Own VT-548	8-3.81x3.6	331	7.5	311	201-3900	NP 540	5	Tim H-141	HF	H	6.8-7.2
K8-D800	132	192	25000	6150	10/22.5D	12/22.5D	Own VT-550	8-3.81x3.6	331	7.5	333	212-3900	Cla 265	5	Tim L-140	HF	H	7.2-7.4
K8-D900	132	192	30000	6625	11/22.5D	12/22.5D	Own VT-552	8-3.94x3.6	354	7.2	355	232-3900	Cla 290	5	Tim QT-140	HF	H	7.4
(c.o.e.) K8-C500	108	162	18000	▲4800	8.22.5D	9/22.5D	Own VT-556	8-3.63x3.8	315	7.5	284	197-4400	NP 420	4	Own VT-556	HF	H	6.29-6.83
(c.o.e.) K8-C600	108	162	21000	▲5350	8.22.5D	10/22.5D	Own VT-558	8-3.63x3.8	315	7.5	284	197-4400	NP 420	4	Eat 1614	HF	H	6.5-7.17
(c.o.e.) K8-C700	108	162	22500	▲5650	9.22.5D	10/22.5D	Own VT-560	8-3.81x3.6	331	7.5	311	201-3900	NP 540	5	Tim H-141	HF	H	6.8-7.2
(c.f.) K8-P300	116	126	9000	2550	7.17.5S	7/17.5D	Own T-518	6-3.25x4.6	230	7.9	202	120-3600	War T870	3	Own T-518	HF	H	4.89-8.75
(c.f.) K8-P300	116	126	9000	2650	7.17.5S	7/17.5D	Own VT-518	8-3.63x3.8	315	8.5	290	204-4400	War T870	3	Own VT-518	HF	H	4.89-8.75
(c.f.) K8-P400	108	129	15000	3325	8/19.5	8/22.5D	Own T-522	6-3.25x4.6	230	7.9	202	120-3600	War T870	3	Own T-522	HF	H	5.63-6.83
(c.f.) K8-P400	108	129	15000	3425	8/19.5	8/22.5D	Own VT-522	8-3.63x3.8	315	8.5	290	204-4400	War T870	3	Own VT-522	HF	H	6.53-6.83
(Sc. Bus) K8-S400	153	153	12000	4425	7.22.5D	7/22.5D	Own TS-542	6-3.43x4.5	251	7.1	216	125-3600	NP 420	4	Own TS-542	HF	H	6.29-6.83
(Sc. Bus) K8-S400	153	153	12000	4500	7.22.5D	7/22.5D	Own VTS-542	8-3.63x3.8	315	7.5	284	197-4400	NP 420	4	Own VTS-542	HF	H	6.29-6.83
K8-S500	193	217	*16000	4725	8.22.5D	10/22.5D	Own TS-544	6-3.43x4.5	251	7.1	216	125-3600	NP 420	4	Own TS-544	HF	H	6.29-6.83
(Sc. Bus) K8-S500	193	217	*16000	4800	8.22.5D	10/22.5D	Own VTS-544	8-3.63x3.8	315	7.5	284	197-4400	NP 420	4	Own VTS-544	HF	H	6.29-6.83
(Sc. Bus) K8-S600	236	236	20000	5600	8.22.5D	10/22.5D	Own TS-546	6-3.43x4.8	265	7.1	228	130-3600	NP 420	4	Eat 1614	HF	H	6.5-7.17
(Sc. Bus) K8-S600	236	236	20000	5675	8.22.5D	10/22.5D	Own VTS-546	8-3.63x3.8	315	7.5	284	197-4400	NP 420	4	Eat 1614	HF	H	6.5-7.17
(Sc. Bus) K8-S700	236	254	21000	5825	8.22.5D	10/22.5D	Own VTS-548	8-3.81x3.6	331	7.5	311	201-3900	NP 540	5	Tim H-141	HF	H	** -6.8
Duplex																		
T	136	220	20000	6600	8.25/20D	9.00/20	Her JXD	6-4x4 1/4	320	6.2	240	113-3000	Fu 5B330	5	Tim H100	B	H	** -7.20
TH-404	136	220	20000	6900	8.25/20D	9.00/20	Her WXLC-3	6-4 1/4x4 3/4	404	5.8	312	139-2600	Fu 5A430	5	Tim H-300	DF	H	6.13-8.15
R	136	220	28000	8820	9.00/20D	10.00/20	Con B6427	6-4 1/2x4 1/2	427	6.6	325	141-2600	Fu 5A43	5	Tim Q300	DF	R	6.42-8.38
SH-529	172	208	28000	9500	10.00/20	11.00/20	Her RXC	6-4 5/8x5 1/4	529	5.4	395	132-2300	Fu 5A620	....	Tim Q200	2F	R	** -7.77
L-6602	164	200	37000	11650	11.00/20D	11.00/20	Con R6602	6-4 7/8x5 3/4	602	6.1	465	200-2600	Fu 5C650	5	Tim U200	DF	R	** -9.83
KH	148	220	34000	10500	11.00/20D	11.00/20	Her RXC	6-4 5/8x5 1/4	529	5.4	395	132-2300	Fu 5A620	5	Tim U200	2F	R	** -9.83
LH	148	220	37000	11300	11.00/20D	11.00/20	Her RXLD	6-4 3/4x5 1/4	558	5.4	430	154-2400	Fu 5C650	5	Tim U200	2F	R	** -9.83
LC-600	148	220	37000	12900	11.00/20	12.00/20	Cum HRB600	6-5 1/2x6	743	....	540	165-1800	Fu 5C650	5	Tim U200	2F	R	** -6.42
Federal																		
2501*	136	250	21000	....	8.25/20	9.00/20	Her JXC	6-3 3/4x4 1/4	282	....	240	103-3200	Cla 205	5	Tim H140	Hy	H	** -7.2
2502	136	250	21000	....	8.25/20	9.00/20	Her JXC	6-3 3/4x4 1/4	282	....	240	103-3200	Cla 205	5	Tim H340	Hy	H	6.16-8.48
3001*	136	250	24000	....	9.00/20	10.00/20	Her JXLD	6-4x4 1/2	339	....	272	131-3200	Cla 205	5	Tim L140	Hy	H	** -7.2
3002	136	250	24000	....	9.00/20	10.00/20	Her JXLD	6-4x4 1/2	339	....	272	131-3200	Cla 205	5	Tim L340	Hy	H	6.36-8.28
3401*	136	250	24500	....	9.00/20	10.00/20	Con T6371	6-4 1/2x4 5/8	370	....	247	142-2600	Spi 3152	5	Tim L140	Hy	H	** -7.2
3402	136	250	24500	....	9.00/20	10.00/20	Con T6371	6-4 1/2x4 5/8	370	....	247	142-2600	Spi 3556	5	Tim L340	Hy	H	6.36-8.28
4401*	136	250	27000	....	10.00/20	11.00/20	Con T6427	6-4 1/2x4 7/8	427	....	342	163-2600	Spi 3152	5	Tim Q140	Hy	R	** -6.83
4402	136	250	27000	....	10.00/20	11.00/20	Con T6427	6-4 1/2x4 7/8	427	....	342	163-2600	Spi 3556	5	Tim Q350	Hy	R	5.58-10.9
D-2501	136	250	21000	....	8.25/20	9.00/20	Con TD6427	6-4 1/2x4 7/8	427	....	300	112-2400	Spi 3152	5	Tim H140	Hy	H	** -6.16
D-2502	136	250	21000	....	8.25/20	9.00/20	Con TD6427	6-4 1/2x4 7/8	427	....	300	112-2400	Spi 3556	5	Tim H340	Hy	H	5.41-7.44
D-3001*	136	250	24000	....	9.00/20	10.00/20	Con TD6427	6-4 1/2x4 7/8	427	....	300	112-2400	Spi 3152	5	Tim L140	Hy	H	** -6.16
D-3002	136	250	24000	....	9.00/20	10.00/20	Con TD6427	6-4 1/2x4 7/8	427	....	300	112-2400	Spi 3556	5	Tim L350	Hy	H	6.68-12.3
D-3401*	136	250	24500	....	9.00/20	10.00/20	Cum JN6	6-4 1/2x5	401	....	280	125-2500	Spi 3152	5	Tim L140	Hy	H	** -6.16
D-3402	136	250	24500	....	9.00/20	10.00/20	Cum JN6	6-4 1/2x5	401	....	280	125-2500	Spi 3556	5	Tim L350	Hy	H	6.68-13.3
D-4401*	136	250	27000	8330	10.00/20	11.00/20	Cum JBS	6-4 1/2x5	401	....	360	150-2500	Spi 3152	5	Tim QT140	Hy	R	** -6.16
D-4402	136	250	27000	8540	10.00/20	11.00/20	Cum JBS	6-4 1/2x5	401	....	360	150-2500	Spi 3556	5	Tim Q350	Hy	R	5.58-10.9
D-4601*	136	250	27000	8430	10.00/20	11.00/20	Cum JNS	6-4 1/2x5	401	....	390	165-2500	Spi 4652	5	Tim QT140	Hy	R	** -6.16
D-4602	136	250	27000	8640	10.00/20	11.00/20	Cum JNS	6-4 1/2x5	401	....	390	165-2500	Spi 4756	5	Tim Q350	Hy	R	5.58-10.9
D-4701*	136	250	27000	8430	10.00/20	11.00/20	Cum JT	6-4 1/2x5	401	....	405	175-2500	Spi 4652	5	Tim QT140	Hy	R	** -6.16
D-4702	136	250	27000	8640	10.00/20	11.00/20	Cum JT	6-4 1/2x5	401	....	405	175-2500	Spi 4756	5	Tim Q350	Hy	R	5.58-10.9
400R-1	133	193	29000	8645	10.00/20	11.00/20	Con T6427	6-4 1/2x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim Q-100	Hy	R	4.63-7.8
400R-2	133	193	29000	8810	10.00/20	11.00/20	Con T6427	6-4 1/2x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim Q-200	Hy	R	7.64-8.38
400R-3	133	193	29000	8675	10.00/20	11.00/20	Con T6427	6-4 1/2x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim Q-300	Hy	R	5.69-6.42
400R-4	133	193	31000	8780	10.00/20	11.00/22	Con T6427	6-4 1/2x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim R-100	Hy	R	4.11-7.40
400R-5	133	193	31000	8920	10.00/20	11.00/22	Con T6427	6-4 1/2x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim R-200	Hy	R	5.91-9.76
400R-6	133	193	31000	8980	10.00/20	11.00/22	Con T6427	6-4 1/2x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim R-300	H2	R	4.41-7.40
400R-7	133	193	36000	9130	11.00/20	12.00/20	Con T6427	6-4 1/2x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim U200	H2	R	5.91-9.76
400R-8	133	193	36000	9260	11.00/20	12.00/20	Con T6427	6-4 1/2x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim U300	H2	R	4.41-7.09
500R-1	133	193	33000	9625	11.00/20	11.00/22	Con U6501	6-4 1/2x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim R100	H	R	4.11-7.40
500R-2	133	193	33000	9780	11.00/20	11.00/22	Con U6501	6-4 1/2x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim R200	H2	R	5.91-9.76
500R-3	133	193	33000	9840	11.00/20	11.00/22	Con U6501	6-4 1/2x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim R300	H2	R	4.41-7.40
500R-4	133	193	37000	9980	11.00/20	12.00/20	Con U6501	6-4 1/2x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim U200	H2	R	5.91-9.76
500R-5	133	193	37000	10140	11.00/20	12.00/20	Con U6501	6-4 1/2x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim U300	H2	R	4.41-7.09
600R-1	133	193	39000	10702	11.00/22	12.00/24	Con R6602	6-4 7/8x5 3/4	602	6.2	480	212-2800	Fu 5A65	5	Tim U200	H2	R	5.91-9.76
600R-2	133	193	39000	10852	11.00/22	12.00/24	Con R6602	6-4 7/8x5 3/4	602	6.2	480	212-2800	Fu 5A65	5	Tim U300	H2	R	4.41-7.09

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1957 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL-BASE		Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear)		ENGINE DETAILS						TRANSMISSION		REAR AXLE				
	Minimum Standard	Maximum Standard			Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Ford Ranchero																		
Sedan Delivery	116	116	4800	.....	7.50/14S	8.00/14S	Own	8-3.62x3.6	223	8.6	212	144-4200	Own	3	Own	H½	H	3.56-4.11
Sedan Delivery	116	116	4600	.....	7.50/14S	8.00/14S	Own*	8-3.62x3.3	272	8.6	270	190-4600	Own	3	Own	H½	H	3.56-4.11
Courier																		
Sedan Delivery	116	116	4800	.....	7.50/14S	8.00/14S	Own	8-3.62x3.6	223	8.6	212	144-4200	Own	3	Own	H½	H	3.56-4.11
Sedan Delivery	116	116	4800	.....	7.50/14S	8.00/14S	Own	8-3.62x3.3	272	8.6	270	190-4600	Own	3	Own	H½	H	3.56-4.11
F100																		
Cab	110	118	5000	.....	6.70/15S	6.50/16S	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	3	Own	H½	H	3.70-4.11
Cab	110	118	5000	.....	6.70/15S	6.50/16S	Own	8-3.62x3.3	272	8.3	260	171-4400	Own	3	Own	H½	H	3.70-4.11
F250																		
Cab	118	118	7400	.....	6.50/16	8/19.5S	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	3	Own	HF	H	4.88-4.56
Cab	118	118	7400	.....	6.50/16	8/19.5S	Own	8-3.62x3.3	272	8.3	260	171-4400	Own	3	Own	HF	H	4.88-4.56
F350																		
Cab	130	130	9800	.....	8/17.5S	8/17.5	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	4	Own	HF	H	4.86-5.83
Cab	130	130	9800	.....	8/17.5S	8/17.5	Own†	8-3.62x3.3	272	8.3	260	171-4400	Own	4	Own	HF	H	4.86-5.83
F500																		
Cab	130	154	15000	.....	7/22.5D	9/22.5	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	4	Own^	HF	H	5.83-6.20
Cab	130	154	15000	.....	7/22.5D	9/22.5	Own‡	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	5.83-6.20
F600																		
Cab	130	192	17000	.....	8/22.5D	10/22.5	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	4	Own^	HF	H	6.80-7.20
Cab	130	192	17000	.....	8/22.5D	10/22.5	Own‡	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	6.80-7.20
F700																		
Cab	132	192	21000	.....	8/22.5D	10/22.5	Own‡	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	7.17-7.20
F750																		
Cab	132	192	22000	.....	9/22.5D	10/22.5	Own	8-3.62x3.7	302	7.6	299	196-3800	Own	5	Own^	HF	H	** -7.17
F800																		
Cab	132	192	25000	.....	10/22.5D	11/22.5	Own	8-3.8x3.7	332	7.6	328	212-3800	Own	5	Own^	SF	H	7.17-7.67
F900																		
Cab	132	192	29000	.....	11/22.5D	12/22.5	Own	8-3.8x3.7	332	7.6	328	212-3800	Own	5	Own^	SF	H	7.67-7.17
T700																		
Cab	144	192	28000	.....	8/22.5D	10/22.5	Own§	8-3.62x3.3	272	7.6	260	178-3800	Own	5	Own	HF	H	6.70-7.79
T750																		
Cab	144	192	37000	.....	9/22.5D	11/22.5	Own	8-3.8x3.7	332	7.6	328	212-3800	Own	5	Own	HF	H	7.79-7.07
T800																		
Cab	144	192	43000	.....	10/22.5D	11/22.5	Own	8-3.8x3.7	332	7.6	328	212-3800	Own	5	Own	SF	H	8.60-7.80
C650																		
Tilt Cab	99	153	18000	.....	7/22.5D	9/22.5	Own‡	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	5.83-6.20
C600																		
Tilt Cab	99	153	18000	.....	8/22.5D	10/22.5	Own‡	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	6.20-7.20
C700																		
Tilt Cab	99	153	22000	.....	8/22.5D	10/22.5	Own‡	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	7.20-7.17
C750																		
Tilt Cab	99	153	23000	.....	9/22.5D	10/22.5	Own	8-3.62x3.7	302	7.6	299	196-3800	Own	5	Own^	HF	H	** -7.17
C800																		
Tilt Cab	99	153	26000	.....	10/22.5D	11/22.5	Own	8-3.8x3.7	332	7.6	328	212-3800	Own	5	Own^	SF	H	7.17-7.67
C900																		
Tilt Cab	99	153	30000	.....	11/22.5D	12/24.5	Own	8-3.8x3.7	332	7.6	328	212-3800	Own	5	Own^	SF	H	7.67-7.17
P350 Parcel Delivery	104	122	8000	.....	7/17.5S	8/19.5S	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	3	Own	HF	H	4.56-5.88
Parcel Delivery	137	137	8000	.....	8/17.5S	8/19.5	Own	8-3.62x3.3	272	8.3	262	181-4400	Own	3	Own	HF	H	4.56-5.88
P400 Parcel Delivery	137	137	10000	.....	8/17.5S	8/19.5	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	3	Own	HF	H	4.86-5.83
Parcel Delivery	137	137	10000	.....	8/17.5S	8/19.5	Own	8-3.62x3.3	272	8.3	262	181-4400	Own	3	Own	HF	H	4.86-5.83
P500 Parcel Delivery	154	154	15000	.....	8/19.5S	8/22.5	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	3	Own^	HF	H	5.83-6.80
Parcel Delivery	154	154	15000	.....	8/19.5S	8/22.5	Own	8-3.62x3.3	272	8.3	262	181-4400	Own	3	Own^	HF	H	5.83-6.80
B500 School Bus																		
Bus Chassis	154	154	15000	.....	7/22.5D	9/22.5	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	4	Own^	HF	H	5.83-6.80
Bus Chassis	154	154	15000	.....	7/22.5D	9/22.5	Own‡	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	5.83-6.80
B600 School Bus																		
Bus Chassis	192	220	17000	.....	8/22.5D	10/22.5	Own	6-3.62x3.6	223	8.3	207	139-4200	Own	4	Own^	HF	H	6.80-7.20
Bus Chassis	192	220	17000	.....	8/22.5D	10/22.5	Own	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	6.80-7.20
B700 School Bus																		
Bus Chassis	245	262	21000	.....	8/22.5D	10/22.5	Own‡	8-3.62x3.3	272	8.3	262	181-4400	Own	4	Own^	HF	H	7.2-7.17
B750 School Bus																		
Bus Chassis	245	262	22000	.....	9/22.5D	10/22.5	Own	8-3.62x3.7	302	7.6	299	196-3800	Own	5	Own^	HF	H	** -7.17
Kenworth (D) ‡921	153¼	255	33000	12000	10.00/20	11.00/22	Cum NHB-600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Tim R200P	H2F	H	5.91-9.76
‡985	153¼	255	33000	10700	10.00/20	11.00/22	HS 590-GV-3	6-5x6	590	6.6	490	232-2800	Fu 5-C720	15	Tim R200P	H2F	H	5.91-9.76
(D) *801	158½		73400	37400	†	†	Cu NHBID-600	6-5½x6	743	16.0	535	200-2100	Fu 10F1220^	10	Own	H2F	R	** -19.2
(D) *802	168		94000	45000	.....	††	"	6-5½x6	743	12.0	800	300-2100	‡‡	...	Own	H2F	R	** -19.2
(D) *802-A	168		94000	45000	.....	††	"	6-5½x6	743	12.4	800	300-2100	Fu 10F1220	10	Own	H2F	R	** -19.2
(D) *803	168		140000	68000	.....	18.00/33	Cu NVH1200	12-5½x6	▼	13.0	♣	400-2100	‡	...	Own	H2F	R	.....
Peterbilt (D) 280	175	Opt	27000	12500	10.00/20D	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	Tim R230DPA	2F	R	5.91-6.51
28C (coe)	114	Opt	27000	.....	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	Tim R230DPA	2F	R	5.91-6.51
281	165	Opt	27000	10450	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8045	12	Tim R230P	2F	R	5.91-6.51
Reo F-20-1	125	185	16000	*5355	8/22.5	10/22.5	Own 255OA‡	6-3½x4½	255	6.7	189	107-3400	WG T98A	...	Tim E100♦	HF	H	6.2-7.2
F-20-2	125	185	17000	*5355	8/22.5	10/22.5	Own 255OA‡	6-3½x4½	255	6.7	189	107-3400	WG T98A	...	Tim E100♦	HF	H	6.2-7.2
F-20-3	125	185	18000	*5385	8/22.5	10/22.5	Own 255OA‡	6-3½x4½	255	6.7	189	107-3400	WG T98A	...	Tim E100♦	HF	H	6.2-7.2
F-20T	125	185	16000	*6215	8/22.5	10/22.5	Own 255OA‡	6-3½x4½	255	6.7	189	107-3400	WG T98A	...	Tim E300	HFd	H	6.16-8.82
F-22-1	130	185	21000	*6295	10/22.5	11/22.5	Own 292OA♣	6-3½x4½	292	6.6	224	124-3300	Cla 205V	...	Tim H140♦	HF	H	6.16-7.2
F-22-2	130	185	21000	*6295	10/22.5	11/22.5	Own 292OA♣	6-3½x4½	292	6.6	224	124-3300	Cla 205V	...	Tim H140♦	HF	H	6.16-7.2
F-22-3	130	185	22000	*6330	10/22.5	11/22.5	Own 292OA♣	6-3½x4½	292	6.6	224	124-3300	Cla 205V	...	Tim H140♦	HF	H	6.16-7.2
F-22T	130	185	21C00	*7095	10/22.5	11/22.5	Own 292OA♣	6-3½x4½	292	6.6	224	124-3300	Cla 205V	...	Tim H340	HFd	H	6.16-8.72
F-22R-1	130	185	23000	*6590	11/22.5	11/24.5	Own 3310A♣‡	6-4½x4½	331	6.4	264	140-3200	Cla 205V	...	Tim L140♦	HF	H	6.16-7.2
F-22R-2	130	185	24000	*6590	11/22.5	11/24.5	Own 3310A♣‡	6-4½x4½	331	6.4	264	140-3200	Cla 205V	...	Tim L140♦	HF	H	6.16-7.2
F-22R-3	130	185	26000	*6880	11/22.5	11/24.5	Own 3310A♣‡	6-4½x4½	331	6.4	264	140-3200	Cla 205V	...	Tim L340	HFd	H	5.99-8.73
F-22RT	130	135	23000	*7515	11/22.5	11/24.5	Own 3310A♣‡	6-4½x4½	331	6.4	264	140-3200	Cla 205V	...	Tim QT140♦	HF	H	6.16-7.8
F-50-1	130	185	28000	*7715	11/22.5	12/22.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Spi 3152	...	Tim QT140♦	HF	H	6.16-7.8
F-50-2	130	185	30000	*7715	11/22.5	12/22.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Spi 3152	...	Tim QT140♦	HF	H	6.16-7.8
F-50-3	130	185	30000	*7785	11/22.5	12/22.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Spi 3152	...	Tim QT340♦	HFd	H	6.00-9.01
F-50T	130	185	28000	*8380	11/22.5	12/22.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Spi 3152	...	Tim QT140♦	HF	H	6.16-7.8
F-50D-1 (QT)	130	185	28000	*8815	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A650	...	Tim QT140♦	HF	H	4.62-6.83

For references and abbreviations see page 140

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• TRUCKS •

1957 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL-BASE		Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear		ENGINE DETAILS						TRANSMISSION		REAR AXLE			
	Minimum Standard	Maximum Standard			Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Reo—Cont.																		
F-50D-1 (RT)	130	185	30000	^9110	11/22.5	12/24.5	Cum JT-6-R	6-4½x5	401	16.0	412	175-2500	Fu 5A650	...	Tim R140♦	HF	H	4.62-6.83
F-50D-2 (QT)	130	185	30000	^9815	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A650	...	Tim QT140♦	HF	H	4.62-6.83
F-50D-2 (RT)	130	185	32000	^9110	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A650	...	Tim R140♦	HF	H	4.62-6.83
F-50D-3 (QT)	130	185	30000	^9885	11/22.5	12/24.5	Cum JT-6-R	6-4½x5	401	16.0	412	175-2500	Fu 5A650	...	Tim QT140♦	HF	H	4.62-6.83
F-50D-3 (RT)	130	185	32000	^9180	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A650	...	Tim R140♦	HF	H	4.62-6.83
F-50DT	130	185	28000	^9475	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A650	...	Tim QT340	HFd	H	4.89-7.56
(c.o.e.) AC-403	108	154	26000	^6850	11/22.5	11/24.5	Own 3310A▲†	6-4½x4½	331	6.4	264	140-3200	Cln 205V	...	Tim L340	HFd	H	5.99-8.73
(c.o.e.) AC-503	108	154	28000	^9150	11/22.5	12/22.5	Own OH171■	6-4½x4½	331	7.5	297	170-3400	Spi 3152	...	Tim QT340	HFd	H	6.00-9.01
A-600	139	187	28000	^8530	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim QT140♦	HF	H	5.28-7.8
A-601	139	187	30000	^8530	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim QT140♦	HF	H	5.28-7.8
A-602	139	183	30000	^8545	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim QT140♦	HF	H	5.28-7.8
A-603	133	151	28000	^9060	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim QT340	HFd	H	5.63-9.01
A-603D	133	151	28000	^9645	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A650	...	Tim QT340	HFd	H	4.89-7.56
(c.o.e.) AC-603	108	154	28000	^9535	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu R46	...	Tim QT140	HF	H	5.63-9.01
(c.o.e.) AC-603D	108	154	28000	^10210	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu R46	...	Tim QT140	HF	H	4.89-7.56
A-607	151	187	26000	^8180	10/22.5	11/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim L140	HF	H	6.16-7.2
A-700	139	187	30000	^8690	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim R140	HF	H	5.28-7.4
A-701	139	187	32000	^8690	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim R140	HF	H	5.28-7.4
A-702	139	187	32000	^8705	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim R140	HF	H	5.28-7.4
A-703	133	151	30000	^9355	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim RT340	HFd	H	5.62-8.83
A-703D	133	151	30000	^9970	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A65	...	Tim RT340	HFd	H	** -4.89
(c.o.e.) AC-703	108	154	30000	^9830	11/22.5	12/24.5	Own OV207*	8-3⅞x4½	390	7.3	354	207-3400	Fu R46	...	Tim RT140♦	HF	H	.....
(c.o.e.) AC-703D	108	154	30000	^10505	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu R46	...	Tim RT140♦	HF	H	.....
A-800	139	187	40000	^9895	11.00/20	11.00/24	Own OV235	8-4¼x4½	440	7.3	412	235-3400	Fu 5A65	...	Tim U200♦	HF	H	.....
A-800-OH	139	187	42000	^10615	11.00/24	.....	Own OV235	8-4¼x4½	440	7.3	412	235-3400	Fu 5A65	...	Tim U200♦	HF	H	.....
(Sch. Bus) F-120L	187	187	18000	^5870	8/22.5	10/22.5	Own 255	6-3⅝x4½	255	6.7	189	107-3400	WG T98A	4	Tim E100	HF	H	6.8-7.2
(Sch. Bus) F-120G	219	219	18500	^6200	8/22.5	10/22.5	Own 255	6-3⅝x4½	255	6.7	189	107-3400	WG T98A	4	Tim E100	HF	H	6.8-7.2
(Sch. Bus) F-120H	238	238	18500	^6335	8/22.5	10/22.5	Own 255	6-3⅝x4½	255	6.7	189	107-3400	WG T98A	4	Tim E100	HF	H	6.8-7.2
(Sch. Bus) F-122H	238	238	21000	^6730	9/22.5	11/22.5	Own 292	6-3⅞x4½	292	6.5	224	124-3300	Cln 205	4	Tim H140	HF	H	6.8-7.2
(Sch. Bus) F-122J	256	256	23000	^6845	9/22.5	11/22.5	Own 292	6-3⅞x4½	292	6.5	224	124-3300	Cln 205	4	Tim H140	HF	H	6.8-7.2
Studebaker 3E5	112	122	4800	2070	6.00/16S	6.50/16S	Own 1E	6-3x4½	186	7.5	152	92-3800	WG T90B	3	Spi 2211	H½	H	4.27-4.89
3E6	112	122	5000	2290	6.00/16S	6.50/16S	Own 4E	6-3⅛x4¾	246	7.5	204	106-3400	WG T90B	3	Spi 2211	H½	H	4.09-4.27
3E7	112	122	5000	2380	6.00/16S	6.50/16S	Own 3E	6-3⅛x3¼	259	7.5	250	170-4200	WG T89C	3	Spi 2211	H½	H	3.73-4.27
3E10	122	122	6700	2315	7.00/16S	7.50/17S	Own 1E	6-3x4½	186	7.5	152	92-3800	WG T90B	3	Spi 60	HF	H	** -4.88
3E11	122	122	7000	2535	7.00/16S	8/19.5S	Own 4E	6-3⅛x4¾	246	7.5	204	106-3400	WG T90B	3	Spi 60	HF	H	4.10-4.88
3E12	122	122	7000	2625	7.00/16S	8/19.5S	Own 3E	6-3⅛x3¼	259	7.5	250	170-4200	WG T89C	3	Spi 60	HF	H	4.10-4.88
3E13	131	131	10000	3140	8/17.5S	8/17.5	Own 3E	6-3⅛x3¼	259	7.5	250	170-4200	WG T98A	4	Tim B100	HF	H	4.86-5.14
3E14	131	131	10000	3050	8/17.5S	8/17.5	Own 4E	6-3⅛x4¾	246	7.5	204	106-3400	WG T98A	4	Tim B100	HF	H	5.14-5.83
3E16	131	155	14000	3635	8/19.5D	8/22.5	Own 4E	6-3⅛x4¾	246	7.5	204	106-3400	WG T98A	4	Tim 53521*	SF	H	5.14-5.83
3E16B	131	155	15000	3670	8/19.5D	8.25/20	Own 4E	6-3⅛x4¾	246	7.5	204	106-3400	WG T98A	4	Tim 53521*	SF	H	5.14-5.83
3E28	131	155	14000	3730	8/19.5D	8/22.5	Own 3E	6-3⅛x3¼	259	7.5	250	170-4200	WG T98A	4	Tim 53521*	SF	H	5.14-5.83
3E28B	131	155	15000	3765	8/19.5D	8.25/20	Own 3E	6-3⅛x3¼	259	7.5	250	170-4200	WG T98A	4	Tim 53521*	SF	H	5.14-5.83
3E17	131	165	17000	4155	8/22.5D	10/22.5	Own 4E	6-3⅛x4¾	246	7.5	204	106-3400	WG T98A	4	Tim E102*	HF	H	6.20-6.80
3E17B	131	212	18300	4185	8/22.5D	9.00/20	Own 4F	6-3⅛x4¾	246	7.5	204	106-3400	WG T98A	4	Tim E102*	HF	H	6.20-6.80
3E36	131	195	17000	4250	8/22.5D	10/22.5	Own 5E	8-3⅛x3¼	259	7.5	250	170-4200	WG T98A	4	Tim E102*	HF	H	6.20-6.80
3E38B	131	212	18300	4280	8/22.5D	9.00/20	Own 5E	8-3⅛x3¼	259	7.5	250	170-4200	WG T98A	4	Tim E102*	HF	H	6.20-6.80
3E40	131	195	19000	4445	8/22.5D	10/22.5	Own 6E	8-3⅛x3½	289	7.5	288	182-4000	NP 420	4	Tim F146^	HF	H	6.20-6.80
3E40B	131	212	21000	4480	8/22.5D	9.00/20	Own 6E	8-3⅛x3½	289	7.5	288	182-4000	NP 420	4	Tim F146^	HF	H	6.20-6.80
Ward La Fr. D-1	149	220	25000	^9500	10.00/20	11.00/20	Con T6427	6-4⅛x4½	427	5.1	340	152-2600	Ful 5A430	5	Tim Q100	B	R	** -6.83
D-1C	149	220	29000	^9500	11.00/20	11.00/22	Con T6427	6-4⅛x4½	427	5.1	340	152-2600	Ful 5A430	5	Tim U200	S2	R	** -7.08
D-3	149	220	29000	^10000	11.00/20	11.00/22	Con R6572	6-4⅝x5½	572	5.9	440	189-2600	Ful 5C650	5	Tim R-200	S2	R	** -7.84
D-3S	149	220	29000	^10000	11.00/20	11.00/22	Con R6602	6-4⅞x5½	602	5.9	463	198-2600	Ful 5C650	5	Tim R-200	S2	R	** -7.84
(D) D-5	149	220	35000	^12500	11.00/22	11.00/22	Cum HB600	6-4⅞x6	672	17.0	500	150-1800	Ful 5C650	5	Tim R-200	S2	R	** -6.42
White-Freightliner (c.o.e.) WF-42	116	120	.....	10800	10.00/20	.....	Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	8	Tim R330	SFd	H	4.77-6.38
Four-Wheel-Drive																		
Coleman G-55	150	160	34000	12000	11.00/20	12.00/20	Buda LO-525	6-4½x5½	525	6.7	400	150-2200	Fu 5A650	5	OW-289-CM	2	...	7.17-9.72
G-55	150	160	34000	12000	11.00/20	12.00/20	Wau 140GZ	6-4⅝x5½	554	6.4	451	188-2600	Fu 4A86	4	OW-289-CM	2	...	7.17-9.72
(D) D-55	150	160	34000	13000	11.00/20*	12.00/20	Cum HB600†	6-4⅞x6	672	17.0	500	150-1800	Fu 5A650■	5	OW-289-CM	2	...	7.17-9.72
Diamond T																		
(D) 723JT	133	211	29500	9800	9.00/20	11.00/20	Cum JT6B	6-4½x5	401	...	405	175-2500	Fu 5A650	5	Eat 18803	.....	.....	.....
(D) 723CJT	111	189	29500	9450	9.00/20	11.00/20	Cum JT6B	6-4½x5	401	...	405	175-2500	Fu 5A650	5	Eat 18803	.....	.....	.....
Dodge K6-W300	126	126	9500	^4375	7.50/20S	9.00/16S	Own T-137	6-3½x4½	230	7.9	198	113-3600	NP 420	4	Own T137	HF	H	4.89-5.83
K8-W500	156	174	18000	6375	8/22.5D	9/22.5	Own T-504	6-3½x4½	265	7.1	228	130-3600	NP 420	4	Tim H153	HF	H	** -6.8
K8-W500	156	174	18000	6450	8/22.5D	9/22.5	Own VT-504	8-3½x3½	315	7.5	284	197-4400	NP 420	4	Tim H153	HF	H	** -6.8
Fabco (c) FD60A	114	123	5800	3800	6.00/16	6.50/16	Chevrolet	6-3⅞x3½	236	7.5	200	112-3700	Chevrolet*	8	Chevrolet	H½	H	** -3.9
(c) FD50S	...	110	6000	3800	6.00/16	6.50/16	Ford	6-3.6x3.6	223	7.5	195	118-2800	Ford*	8	Ford	H½	H	** -4.27
(c) FD50B	...	110	6000	3800	6.00/16	6.50/16	Ford	6-3.5x3.1	239	7.5	215	122-4200	Ford*	8	Ford	H½	H	** -4.27
(c) FD76A	123	...	8500	4000	6.00/15	7.50/17	Chevrolet	6-3⅞x3½	236	7.5	200	112-3700	Chevrolet*	8	Chevrolet	HyF	H	** -4.57
(c) FD76B	118	...	8500	4000	6.50/16	7.50/17	Ford	6-3.6x3.6	223	7.5	195	118-3800	Ford*	8	Ford	HF	H	** -4.88
(c) FD75B	118	...	8500	4000	6.50/16	7.50/17	Ford	8-3.5x3.1	239	7.5	215	132-4200	Ford*	8	Ford	HF	H	** -4.88
(c) FD101A	135	...	11400	4400	7.00/17	7.00/18	Chevrolet	6-3⅞x3½	236	7.5	200	112-3700	Chevrolet*	8	Chevrolet	HyF	H	** -5.14
(c) FD101B	130	...	11400	4400	7.00/17	7.50/16D	Ford	6-3.6x3.6	223	7.5	195	118-3800	Ford*	8	Ford	HF	H	** -5.83
(c) FD101B	130	...	11400	4400	7.00/17	7.50/16D	Ford	8-3.5x3.1	239	7.5	215	132-4200	Ford*	8	Ford	HF	H	** -5.83
(c) FD201A	130	172	19000	5700	7.50/20	9.00/20	Chevrolet	8-3⅞x3½	261	7.2	220	135-4000	Chevrolet*	8	Chevrolet	HyF	H	** -6.17
(c) FD201B	130	172	19000	5700	7.50/20	8.25/20	Ford	8-3.5x3.1	239	7.5	215	132-4200	Ford*	10	Ford	HF	H	** -6.8
(c) FD201B	130	172	19000	5700	7.50/20	8.25/20	Ford	8-3.6x3.1	256	7.5	226	140-3900	Ford*	10	Ford	HF	H	** -6.8
(c) FD251B	130	172	27000	7500	8.25/20	9.00/20	Ford	8-3.8x3.5	317	7.2	286	170-3900	Ford*	10	Ford	SF	H	7.17-7.67
Federal T400R-1	157	205	44000	12890	10.00/20	11.00/22	Con T6427	6-4⅛x4½	427	6.4	350	170-3000	Cln 290V	5	Tim SQD	H2	L	5.78-9.21
T500R-1	157	205	45000	14305	10.00/20	11.00/22	Con U8501	6-4½x5½	501	6.1	413	182-2800	Ful 5A65	5	Tim SQD	H2	L	5.78-9.21
T600R-1	157	216	60000	16975	11.00/22	12.00/24	Con R8602	6-4⅞x5½	602	6.2	480	212-2800	Ful 5A65	5	Tim SFD4600	H2	L	8.07-11.6
T600R-4	157	216	60000	16585	11.00/22	12.00/24	Con R8602	6-4⅞x5½	602	6.2	480	212-2800	Ful 5A65	5	Tim SW456	W	L	4.71-8.2

For references and abbreviations see page 140

For Directory of the Truck Manufacturers listed above, see Table of Contents

1957 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL-BASE: Minimum Standard	WHEEL-BASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear): Standard Front and Rear	TIRE SIZES (D-dual rear S-single rear): Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Four-Wheel Drive—Cont'd																		
FWD *140	142	Opt	14500	6200	7.50/20D	10.00/20S	Int RD240	6-3 7/8x4 1/2	240	7.0	208	131-3800	WG T9	8	Own 13C	SF	H	** -6.17
U150	130	Opt	14500	6260	7.50/20D	10.00/20S	Int BD240	6-3 7/8x4 1/2	240	7.0	208	131-3800	WG T9	8	Own 13C	SF	H	** -6.17
*181	154	Opt	18000	6620	8.25/20D	10.00/20S	Int BD282	6-3 7/8x4 1/2	282	6.5	251	137-3600	Int F51C	5	Own 13C	SF	H	5.86-10.5
*182	154	Opt	18000	6630	8.25/20D	10.00/20S	Int BD308	6-3 7/8x4 1/2	308	6.5	273	150-3600	Int F51C	5	Own 13C	SF	H	5.86-10.5
*202	154	Opt	20000	6680	8.25/20D	10.00/20S	Int BD308	6-3 7/8x4 1/2	308	6.5	273	150-3600	Int F51C	5	Own 13C	SF	H	5.86-10.5
*232	154	Opt	23000	8100	9.00/20D	10.00/20	Int BD308	6-3 7/8x4 1/2	308	6.5	273	150-3600	Int F51C	5	Own 23	SF	H	4.86-8.98
*233D	154	Opt	23000	9000	9.00/20D	10.00/20	GMC 3-71	3-4 1/4x5	213	16.0	277	102-2100	Ful 5A430	5	Own 23	SF	H	4.86-8.98
*284	154	Opt	28000	8850	10.00/20D	11.00/20	Int RD372	6-4 5/8x4 1/2	372	6.5	309	165-3200	Ful F52C	5	Own 23	SF	H	4.86-8.98
M284D	161	Opt	28000	9800	10.00/20D	11.00/20	GMC 4-71	4-4 1/4x5	284	16.0	380	150-2100	Ful 5C650	5	Own 23	SF	H	4.86-8.98
*284D	154	Opt	28000	9800	10.00/20D	11.00/20	Int RD372	6-4 5/8x4 1/2	372	6.5	309	165-3200	Ful F52C	5	Own 23	SF	H	4.86-8.98
*285	154	Opt	28000	8860	10.00/20D	11.00/20	GMC 4-71	4-4 1/4x5	284	16.0	380	150-2100	Ful 5C650	5	Own 23	SF	H	4.86-8.98
*285D	154	Opt	28000	9750	10.00/20D	11.00/20	Int RD406	6-4 5/8x4 1/2	406	6.5	338	175-3200	Ful F52C	5	Own 23	SF	H	4.86-8.98
M285	161	Opt	28000	8860	10.00/20D	11.00/20	Cum JT6B	6-4 1/2x5	401	15.0	407	175-2500	Ful 5C650	5	Own 23	SF	H	4.86-8.98
*305	154	Opt	30000	11400	11.00/20D	13.00/20S	Int RD406	6-4 5/8x4 1/2	406	6.5	338	175-3200	Ful F52C	5	Own 23	SF	H	4.86-8.98
*326	154	Opt	32000	11400	11.00/20D	13.00/20S	Int RD406	6-4 5/8x4 1/2	406	6.5	338	175-3200	Ful F54C	5	Own 33A	SF	H	4.18-12.2
*324D	154	Opt	32000	12150	11.00/20D	13.00/20S	Int RD450	6-4 5/8x5	450	6.2	387	182-3000	Ful F54C	5	Own 33A	SF	H	4.18-12.2
*327D	154	Opt	32000	12930	11.00/20D	13.00/20S	GMC 4-71	4-4 1/4x5	284	16.0	380	150-2100	Ful 5C650	5	Own 33A	SF	H	4.18-12.2
*367	154	Opt	36000	11600	11.00/20D	13.00/20S	Cum HRB600	6-5 1/2x6	743	16.0	540	165-1800	Ful 5C720	5	Own 33A	SF	H	4.18-12.2
*368D	154	Opt	36000	13100	11.00/20D	13.00/20S	Int RD501	6-4 1/2x5 3/4	501	6.5	444	212-3000	Ful F55C	5	Own 33	SF	H	4.85-14.1
S326	154	Opt	32000	11715	11.00/20S	13.00/20S	Cum HRB6600	6-5 1/2x6	743	16.0	505	180-2000	Ful 5C720	5	Own 33	SF	H	4.85-14.1
S324D	154	Opt	32000	12180	11.00/20S	13.00/20S	Int RD450	6-4 5/8x5	450	6.2	387	182-3000	Ful F54C	5	Own 33A	SF	H	4.18-12.2
*408	154	Opt	40000	13900	12.00/20D	14.00/20S	GMC 4-71	4-4 1/4x5	284	16.0	380	150-2100	Ful 5C650	5	Own 33A	SF	H	4.18-12.2
*409	154	Opt	40000	13900	12.00/20D	14.00/20S	Wau 145GK	6-5 1/4x6	779	6.2	595	216-2000	Ful 10A1120	10	Own 33	SF	H	5.71-8.53
*406D	154	Opt	40000	14630	12.00/20D	14.00/20S	Wau 145GKB	6-5 1/4x6	779	6.2	595	240-2400	Ful 10A1120	10	Own 33	SF	H	5.71-8.53
*409D	154	Opt	40000	14800	12.00/20D	14.00/20S	GMC 6-71	6-4 1/2x5	426	16.0	570	227-2250	Ful 10A1120	10	Own 33	SF	H	5.71-8.53
							Cum NHB600	6-5 1/2x6	743	16.0	535	200-2100	Ful 10A1120	10	Own 33	SF	H	5.71-8.53
Marmon-Herr. M104	110	118	5300	3800	6.50/16	7.10/15	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	4	Ford	H	H	** -4.27
6M104	110	118	5300	3800	6.50/16	7.10/15	Ford	6-3.62x3.6	223	7.8	202	133-4000	Ford	4	Ford	H	H	** -4.27
M254	118		8000	4200	7.50/17	8.00/17	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -4.88
6M254	118		8000	4200	7.50/17	8.00/17	Ford	6-3.62x3.6	223	7.8	202	133-4000	Ford	8	Ford	H	H	** -4.88
M354	130		8000	4300	7.00/18	8.00/17	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -5.83
6M354	130		8000	4300	7.00/18	8.00/17	Ford	6-3.62x3.6	223	7.8	202	133-4000	Ford	8	Ford	H	H	** -5.83
M504	130	154	17500	5700	7.00/22	8.00/22	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -5.83
6M504	130	154	17500	5700	7.00/22	8.00/22	Ford	6-3.62x3.6	223	7.8	202	133-4000	Ford	8	Ford	H	H	** -5.83
CM504	134	158	17500	5900	7.00/22	8.00/22	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -5.83
M604	130	172	20000	5640	9.00/22	10.00/22	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -6.80
CM604	134	158	20000	5850	9.00/22	10.00/22	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -6.80
M704	132	192	22000	7000	9.00/22	10.00/22	Ford	8-3.62x3.3	272	7.6	259	168-3800	Ford	8	Ford	H	H	** -7.17
CM704	134	158	22000	7600	9.00/22	10.00/22	Ford	8-3.62x3.3	272	7.6	259	168-3800	Ford	8	Ford	H	H	** -7.17
M754	132	192	24000	7400	9.00/22	10.00/22	Ford	8-3.62x3.7	302	7.5	286	186-3800	Ford	10	Ford	H	H	** -7.17
CM754	132	156	24000	7600	9.00/22	10.00/22	Ford	8-3.62x3.7	302	7.5	286	186-3800	Ford	10	Ford	H	H	** -7.17
M804	132	192	26000	7600	10.00/22	11.00/22	Ford	8-3.8x3.66	332	7.5	306	190-3800	Ford	10	Ford	SB	H	** -7.17
CM804	132	156	26000	7900	10.00/22	11.00/22	Ford	8-3.8x3.66	332	7.5	306	190-3800	Ford	10	Ford	SB	H	** -7.17
M904	132	192	29000	7800	11.00/22	11.00/24	Ford	8-3.8x3.66	332	7.5	316	200-3800	Ford	10	Ford	SB	H	** -7.17
CM904	132	156	29000	7900	11.00/22	11.00/24	Ford	8-3.8x3.66	332	7.5	316	200-3800	Ford	10	Ford	SB	H	** -7.17
MH-610	159	193	24000	9547	10.00/20D	11.00/20	Her WXLC3	6-4 1/4x4 3/4	404	6.5	312	139-2600	MH610	10	MH610A	HyF	H	** -6.80
MH-615	159	193	26000	10158	10.00/20D	11.00/20	Her WXLC3	6-4 1/4x4 3/4	404	6.5	312	139-2600	MH615	10	MH615A	2S	H	** -8.43
MH-620	159	193	28000	10615	10.00/20D	11.00/20	Her RXLC	6-4 5/8x5 1/2	529	6.0	408	146-2400	MH620	10	MH620A	2S	H	** -8.43
MH-625	159	193	30000	11511	11.00/20D	12.00/20	Her RXLC	6-4 5/8x5 1/2	529	6.0	408	146-2400	MH625	10	MH625	2S	H	** -8.59
MH-630	159	193	33000	11711	11.00/20D	12.00/20	Her RXLDH	6-4 5/8x5 1/2	558	6.0	440	180-2600	MH630	10	MH630	2SF	H	** -8.59
Oshkosh W-214	150	205	22000	9025	9.00/20D	9.00/20	Con B6427	6-4 1/8x4 7/8	427	....	328	137-2600	Own W214	5	Own W214	HF	H	** -6.2
W-214-D	150	205	22000	9300	9.00/20	9.00/20	Con T6427	6-4 1/8x4 7/8	427	....	308	124-2400	Own W214	5	Own W214	HF	H	** -6.2
W-314	150	205	25000	*9650	10.00/20D	10.00/20	Con B6427	6-4 1/8x4 7/8	427	....	328	137-2600	Own W314	5	Own W314	HF	H	** -6.2
W-314-D	150	205	25000	9700	10.00/20	10.00/20	Con T6427	6-4 1/8x4 7/8	427	....	308	124-2400	Own W314	5	Own W314	HF	H	** -6.2
W-414	150	205	28000	*10150	10.00/20D	10.00/20	Con T6427	6-4 1/8x4 7/8	427	....	342	157-2600	Own W414	5	Own W414	HF	H	** -6.2
W-514-D	150	205	30000	10300	10.00/20D	11.00/20	Cum JT-6B	6-4 1/2x5	401	....	407	175-2500	Own W514	5	Own W514	HF	H	** -7.2
W-1700-15-C 160 3/4			32000	12300	11.00/20D	12.00/20	Con R-8513	6-4 1/2x5 3/4	513	....	427	190-2600	O. W1700-15	10	O. W1700-15	SF	H	** -7.15
W-1700-15-CR 161 1/4			32000	12300	11.00/20D	12.00/20	Con R-8513	6-4 1/2x5 3/4	513	....	427	190-2600	O. W1700-15	10	O. W1700-15	SF	H	** -7.27
W-614	150	205	32000	12200	11.00/20D	12.00/20	Con R8513	6-4 1/2x5 3/4	513	....	427	190-2600	Own W614	5	Own W614	SF	H	** -7.1
W-814	150	205	36000	12600	11.00/20D	12.00/20	Con R8572	6-4 5/8x5 3/4	572	....	464	210-2600	Own W814	5	Own W814	SF	H	** -7.1
W-815	150	205	36000	12600	11.00/20D	12.00/20	Con R6602	6-4 7/8x5 3/4	602	....	484	218-2600	Own W815	5	Own W815	SF	H	** -7.1
W-824	150	205	36000	12800	11.00/20D	12.00/20	Con R8572	6-4 5/8x5 3/4	572	....	464	210-2600	Own W824	5	Own W824	2F	H	** -7.2
W-825	150	205	36000	12800	11.00/20D	12.00/20	Con R6602	6-4 7/8x5 3/4	602	....	484	218-2600	Own W825	5	Own W825	2F	H	** -7.2
W-816	150	205	36000	14100	12.00/20D	12.00/20	Cum HB600	6-4 7/8x6	672	....	500	150-1800	Own W816	5	Own W816	SF	H	** -5.6
W-826	150	205	36000	14300	12.00/20D	12.00/20	Cum HB600	6-4 7/8x6	672	....	500	150-1800	Own W826	5	Own W826	2F	H	** -5.6
W-817	158	205	36000	14400	12.00/20D	12.00/20	Cum HRFB600	6-5 1/2x6	743	....	550	180-2000	Own W817	5	Own 817	SF	H	** -5.4
W-827	158	205	36000	14800	12.00/20D	12.00/20	Cum HRFB600	6-5 1/2x6	743	....	550	180-2000	Own W827	5	Own 827	2F	H	** -5.4
(D) WA-906	160	205	40000	^16000	13.00/20D	14.00/20S	Cum HRFB600	6-5 1/2x6	743	....	550	180-2000	Own WA906	12	Own WA9C6	2F	H	** -6.15
W2211	160	205	42000	^16500	13.00/20D	14.00/20S	Wau 145GBK	6-5 1/4x6	779	....	590	240-2400	Own W2211	12	Own W2211	2F	H	** -6.15
W2206	160	205	54000	^19000	13.00/24D	14.00/24	HS 1091G1	6-5 3/4x7	■	....	960	330-2000	Own W2206	10	Own W2206	2F	H	** -6.3
(D) WA2208	160	205	42000	^16800	13.00/20D	14.00/20S	Cum NHB-600	6-5 1/2x6	743	....	550	200-2100	Own WA2208	12	Own WA2208	2F	H	** -6.15
(D) W2209	160	205	54000	^19500	13.00/24D	14.00/24	Cum NHRS600	6-5 1/2x6	743	....	818	300-2100	Own W2209	10	Own W2209	2F	H	** -6.30
Walter (c.f.) FZM	126	150	24000	9000	12.00/20S		Wau MZA	6-4 1/4x4 3/4	404	5.6	290	125-2600	Own FJN	6	Own MS	2	H	** -8.00
(c.f.) AEB	126	150	34000	13000	12.00/24S		Wau 140GZ	6-4 5/8x5 1/2	554	6.2	440	165-2250	Own FC	6	Own FCC	2	H	** -9.00
(c.f.) AGB	138	162	34000	14000	12.00/24S		Wau 145GK	6-5 1/4x6	779	6.2	585	215-2000	Own FA	6	Own FCC	2	H	** -9.00
(c.f.) AGR	138	162	42000	15000	12.00/24D		Wau 145GK	6-5 1/4x6	779	6.2	585	215-2000	Own FA	6	Own FCR	2	H	** -9.00
Ward La Fr. FD1			35000	^11500	11.00/22	11.00/22	Cont 6513	6-4 1/2x5 3/4	513	5.9	406	180-2600	Ful 5A620	5	Tim R462W	S2	R	** -8.15
(D) FD2			35000	^12000	11.00/24	11.00/24	Cum HB600	6-5 1/2x6	672	17.0	500	150-1800	Ful 5A920	5	Tim R462W	S2	R	** -8.15
Willys*Jp. CJ-3B	80	80	3500	*2243	6.00/16S	9.00/13S	Own F4-134	4-3 1/2x4 3/8	134	6.9	114	72-4000	WG T90C	3S	Spi 44-2	Hy 1/2	H	** -5.38
CJ-5	81	81	3750	*2274	6.00/16S	9.00/13S	Own F4-134	4-3 1/2x4 3/8	134	6.9	114	72-4000	WG T90C	3S	Spi 44-2	Hy 1/2	H	** -5.38
F4-134-4WD	118	118	6000	*3200	7.00/16S	9.00/13S	Own F4-134	4-3 1/2x4 3/8	134	6.9	114	72-4000	WG T90C	3S	Spi 53	H 1/2	H	** -5.38
66-226-4WD	118	118	6000	*3311	7.00/16S	9.00/13S	Own L6-226	6-3 7/8x4 3/8	226	5.9	190	115-3650	WG T90J	3S	Spi 53	H	H	4.88-5.38
CJ-6	101	101	3900	2336	6.00/16S	9.00/13S	Own F4-134	4-3 1/2x4 3/8	134	6.9	114	72-4000	WG T90C	3S	Spi 44-2	Hy 1/2	H	** -5.38
DJ-3A	80	80	2600	2015	6.40/15S	9.00/13S	Own L4-134	4-3 1/2x4 3/8	134	6.5	105	60-4000	WG T90C	3	Spi 23	H 1/2	H	** -4.56
(c.f.) FC150	81	81	5000	*3020	7.00/15		Own F4-134	4-3 1/2x4 3/8	134	6.9	114	72-4000	WG T90A	6	Spi 44-2	Hy	....	** -5.38

For references and abbreviations see page 140

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• TRUCKS •

1957 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL-BASE: Minimum Standard	WHEEL-BASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear, S-single rear): Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Six-Wheelers																		
Available	*560S Opt	Opt	40000	^11750	10.00/20D	11.00/20	Wau 135GZ	6-4⅝x5	451	6.3	350	155-2800	Fu 5A62•	5	Tim SLD	2F	R	** -7.00
	*600S Opt	Opt	48000	^12350	10.00/20D	11.00/24	Wau 140GK	6-4½x5½	525	6.4	405	188-2800	Fu 5A65•	5	Tim SQD	2F	R	** -7.54
	*610S Opt	Opt	60000	^14700	11.00/20D	12.00/24	Wau 145GK	6-5¼x6	779	6.2	600	230-2200	Spi 8051A•	5	Tim SW456	2F	R	** -7.60
(D)	*630SD Opt	Opt	60000	^16250	11.00/20D	12.00/24	Cum NHB	6-5½x6	743	17.0	535	200-2100	Spi 8051A•	5	Tim SFD4600	2F	R	** -8.07
Brockway	148SLD 154	198	40000	10125	10.00/20	10.00/20	BC 42BD	6-4⅞x4⅞	427	6.4	352	165-3000	Fu 5A43†	15	Tim SLDD	HF	L	6.41-7.0
	153SQ 156	204	45000	13275	11.00/20	11.00/20	BC 42BD	6-4⅞x4⅞	427	6.4	352	165-3000	Fu 5A43†	15	Tim SQDD	HF	L	6.44-7.54
	260SQ 156	204	50000	14125	11.00/20	11.00/20	BC 48BD	6-4⅝x5½	572	6.3	484	230-2800	Fu 5C65†	15	Tim SQDD	HF	L	6.44-7.54
	260SF 156	204	60000	15350	11.00/22	11.00/24	BC 48BD	6-4⅝x5½	572	6.3	484	230-2800	Fu 5C65†	15	Tim SFDD	HF	L	6.07-9.02
Diamond T	730 133	211	29500	8950	10.00/20	11.00/22	XL450	6-4⅝x5	451	....	388	174-2600	Cla 292VO	5	Eat 18803	....	R	....
	730C 99	169	29500	8500	10.00/20	11.00/22	XL450	6-4⅝x5	451	....	388	174-2600	Cla 292VO	5	Eat 18803	....	R	....
	830 145	211	30000	8700	10.00/20	11.00/22	XL501	6-4½x5½	501	....	444	212-3000	Fu 5A650	5	Eat 18803	....	R	....
	830C 99	169	30000	8600	10.00/20	11.00/22	XL501	6-4½x5½	501	....	444	212-3000	Fu 5A650	5	Eat 18803	....	R	....
	920 145	211	31500	10600	10.00/20	11.00/22	Con R8602	6-4⅞x5⅝	602	....	484	221-2600	Spi 6452	5	Tim R140P	....	R	....
(D)	921 145	211	31500	11000	9.00/20D	11.00/22D	Cum HB600	6-4⅞x6	672	....	480	150-1500	Spi 6452	5	Eat 18803	....	R	....
(D)	921R 145	211	31500	12400	9.00/20D	11.00/22D	Cu HRB8600	6-5½x6	743	....	550	180-2000	Fu 10B1120	10	Tim R140P	....	R	....
(D)	921N 145	211	31500	12350	9.00/20D	11.00/22D	Cu NHB600	6-5½x6	743	....	550	206-2100	Fu 10B1120	10	Tim R140P	....	....	....
(D)	921CR 147	190	31500	9800	10.00/20D	11.00/20D	Cu HRF8600	6-5½x6	743	....	550	180-2000	Fu 5C720	....	Eat 1911	....	....	....
(D)	921CN 147	190	31500	....	10.00/20D	11.00/20D	Cu NHB600	6-5½x6	743	....	550	200-2100	Fu 5C720	....	Eat 1911	....	....	....
Dodge	K8-T700 141	189	32000	7900	8.22.5D	10/22.5	Own VT-562	8-3⅛x3½	331	7.5	311	201-3900	Cla 265	5	Tim SDHD	SFH	L	6.8-7.8
	K8-T800 144	192	36000	9025	9.22.5D	10/22.5	Own VT-566	8-3⅛x3½	331	7.5	331	212-3900	Cla 265	5	Tim SFHD	SFH	L	6.8-7.8
	K8-T900 144	192	46000	16325	10/22.5D	12/22.5	Own VT-568	8-3⅛x3½	354	7.3	355	232-3900	Cla 290	5	Tim SLHD	SFH	L	7.8-8.6
Duplex	TH6 162	229	36000	9180	8.25/20	9.00/20	Her JXD	6-4x4½	320	6.2	240	113-3000	Fu 5B33‡	10	Tim SBD1055	BF	L	** -8.16
	RH-6 160	208	40000	11500	10.00/20	11.00/20	Con B6427	6-4⅞x4⅞	427	6.6	325	141-2600	Fu 5A43	5	Tim SD3010	2F	II	8.27-
(D)	L6 172	208	45000	15000	11.00/20	12.00/20	Cum HB600	6-4½x6	672	17.0	495	150-1800	Fu 5A920	5	Tim SD434	SF2	L	6.8-8.15
	L-8802-4 148	220	34000	13300	11.00/20	12.00/20	Con R8602	6-4⅞x5⅝	602	6.1	484	200-2600	Fu 5650	5	Tim 1758	2F	R	** -9.83
Fabco (c)	FD201A 130	Opt	30000	10500	8.25/20	9.00/20	Chevrolet	6-3⅝x3½	261	7.2	220	135-4000	Chevrolet*	8	Chevrolet	HyF	H	** -6.17
(c)	FD201B 130	Opt	30000	10500	8.25/20	9.00/20	Ford	8-3.5x3.1	239	7.5	215	132-4000	Ford*	10	Ford	HF	H	** -6.8
(c)	FD201B 130	Opt	30000	10500	8.25/20	9.00/20	Ford	8-3.6x3.1	256	7.5	228	140-3000	Ford*	10	Ford	HF	H	** -6.8
(c)	FD251B 130	Opt	40000	13000	8.25/20	9.00/20	Ford	8-3.8x3.5	317	7.2	286	170-3900	Ford*	10	Ford	SF	H	7.17-7.67
FWD	6-222 154	Opt	22000	8790	7.00/20D	9.00/20	Int BD308	6-3⅛x4½	308	6.5	273	150-3600	Int F51C	10	Own 6-13CT	SF	T	** -6.17
	6-282 154	Opt	28000	8820	7.50/20D	9.00/20	Int BD308	6-3⅛x4½	308	6.5	273	150-3600	Int F51C	10	Own 6-13CT	SF	T	** -6.17
	6-324 154	Opt	32000	9660	8.25/20D	10.00/20	Int RD372	6-4⅝x4½	372	6.5	309	165-3200	Ful 5A620	10	Own 6-13CH	SF	T	4.7-11.5
	6-325 154	Opt	32000	9990	8.25/20D	10.00/20	Int RD406	6-4⅝x4½	406	6.5	338	175-3200	Ful 5A620	10	Own 6-13CH	SF	T	4.7-11.5
	6-386 154	Opt	38000	12300	9.00/20D	10.00/20	Int RD450	6-4⅝x5	450	6.2	387	182-3000	Ful 5C650	10	Own 6-23	SF	T	4.7-11.5
	6-364D 154	Opt	36000	13150	9.00/20D	10.00/20	GMC 4-71	4-4¼x5	284	16.0	380	150-2100	Ful 5C65	10	Own 6-23	SF	T	4.7-11.5
	6-368D 188	Opt	36000	13980	9.00/20D	10.00/20	Cum HRB8	6-5½x6	743	16.0	505	180-2000	Ful 5C72	10	Own 6-23	SF	T	4.7-11.5
	6-407 154	Opt	40000	12400	10.00/20D	10.00/20	Int RD501	6-4½x5½	501	6.5	444	212-3000	Ful 5C65	10	Own 6-23	SF	T	1.7-11.5
	6-406D 188	Opt	40000	14120	10.00/20D	10.00/20	GMC 6-71	6-4¼x5	426	16.0	570	227-2250	Ful 5A1120	10	Own 6-23	SF	T	4.7-11.5
	6-409D 188	Opt	40000	14200	10.00/20D	10.00/20	Cum NHB	6-5½x6	743	16.0	535	200-2100	Ful 5C72	10	Own 6-23	SF	T	4.7-11.5
	R6-404D 225	Opt	40000	15650	10.00/20D	10.00/20	GMC 4-71	4-4¼x6	284	16.0	380	150-2100	Ful R96	20	Own 6-23	SF	T	4.7-11.5
	R6-406D 229	Opt	40000	16200	10.00/20D	10.00/20	GMC 6-71	6-4¼x5	426	16.0	570	227-2250	Ful R96	20	Own 6-23	SF	T	4.7-11.5
	6-609 188	Opt	60000	18090	12.00/20D	13.00/20D	Wau 145GKB	6-5¼x6	779	6.2	595	240-2400	Ful 10A1120	10	Own 6-33	SF	T	5.7-8.53
	6-606D 188	Opt	60000	18820	12.00/20D	13.00/20D	GMC 6-71	6-4¼x5	426	16.0	570	227-2250	Ful 10A1120	10	Own 6-33	SF	T	5.7-8.53
	6-609D 188	Opt	60000	18990	12.00/20D	13.00/20D	Cum NHB	6-5½x6	743	16.0	535	200-2100	Ful 10A1120	10	Own 6-33	SF	T	5.7-8.53
	T47 142	....	28000	9445	10.00/20D	....	Int RD501	6-4½x5½	501	6.5	444	212-3000	Ful R46	8	Own 23	SF	H	4.86-10.5
	T44D 142	....	28000	10245	10.00/20D	....	GMC 4-71	4-4¼x5	284	16.0	380	150-2100	Ful R46	8	Own 23	SF	H	4.86-10.5
	T45D 142	....	28000	10245	10.00/20D	....	Cum JT6B	6-4⅝x5½	401	16.0	405	175-2500	Ful R46	8	Own 23	SF	H	4.86-10.5
	T414D 142	....	28000	10445	10.00/20D	....	Dutz F8L614	8-4⅝x5½	649	17.0	448	170-2300	Ful 5C65	5	Own 23	SF	H	4.86-10.5
	T647 160	....	40000	11275	10.00/20D	....	Int RD501	6-4½x5½	501	6.5	444	212-3000	Ful R46	8	Own 23PT*	SF	T	4.86-10.5
	T644D 160	....	40000	12075	10.00/20D	....	GMC 4-71	4-4¼x5	284	16.0	380	150-2100	Ful R46	8	Own 23PT*	SF	T	4.86-10.5
	T645D 160	....	40000	12075	10.00/20D	....	Cum JT6B	6-4⅝x5½	401	16.0	405	175-2500	Ful R46	8	Own 23PT*	SF	T	4.86-10.5
	T6414D 160	....	40000	12275	10.00/20D	....	Dutz F8L614	8-4⅝x5½	649	17.0	448	170-2300	Ful 5665	5	Own 23PT*	SF	T	4.86-10.5
	†TS647 124	....	40000	11275	10.00/20D	....	Int RD501	6-4½x5½	501	6.5	444	212-3000	Ful R46	8	Own 23PT*	SF	T	4.86-10.5
	†TS644D 124	....	40000	12075	10.00/20D	....	GMC 4-71	4-4¼x5	284	16.0	380	150-2100	Ful R46	8	Own 23PT*	SF	T	4.86-10.5
	†TS645D 124	....	40000	12075	10.00/20D	....	Cum JT6F	6-4⅝x5½	401	16.0	405	175-2500	Ful R46	8	Own 23PT*	SF	T	4.86-10.5
	C6-407 162	Opt	40000	13240	10.00/20D	....	Int 501	6-4½x5½	501	6.5	444	212-3000	Ful 5C65	10	Own 6-23	SF	T	4.7-11.5
	†CS6-457 168	....	45000	13740	10.00/20D	....	Int 501	6-4½x5½	501	6.5	444	212-3000	Ful 5C65	10	Own 6-23	SF	T	4.7-11.5
Kenworth (D)	•922 191	255	43000	14100	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	T R200P++	2F	H	5.91-9.76
(D)	•923-4R 190	255	43000	15200	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Tim SQW	WF	L	5.67-8.20
(D)	•924-4R 190	255	61000	16400	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Tim SW456P	WF	L	4.72-8.20
(D)	548-4R 201	....	67000	20150	12.00/24	12.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Tim SFD 4640	B2F	L	8.07-11.6
(D)	552-6 178	....	54000	22500	13.00/24	13.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241^	12	Tim SFD 4640	B2F	L	8.07-11.5
(D)	•925-4R 190	255	43000	14400	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Ti GSWQFR2	WF	....	5.67-8.20
(D)	•929-4R 175¼	255	43000	14200	10.00/20	11.00/22	HS 590GV3	6-5x7	590	6.6	490	232-2800	Fu 5C720	15	Tim SQD	B2F	L	4.68-9.21
(D)	548-4R 210¾ 234‡		98000	20000	12.00/24	14.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241^	12	Tim SFD 4640	B2F	L	8.07-11.6
(D)	548-4R 210¾ 234‡		98000	21700	12.00/24	14.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241^	12	Tim SFD 4640	B2F	L	8.07-11.6
(D)	•950-4R 210¾ 234‡		98000	21900	12.00/24	14.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241^	12	Tim SFD 4640	B2F	L	8.07-11.6
Oshkosh	W-825-6X6 178	Opt	45000	12500	11.00/20	11.00/20	Cum R6602	6-4⅞x5¾	602	....	484	218-2600	Own W-825	5	Tim SFD 3020	2F	L	** -7.2
	W-826-6X6 178	Opt	45000	19000	11.00/20	11.00/20	Cum HB600	6-4⅞x6	672	....	500	150-1800	Own W-826	5	Tim SFD 3020	2F	L	** -5.6
	""W1602 Opt	Opt	95000	....	14.00/24D	14.00/24	Optional	....	....	....	....	....	△	....	Tim SD472	2F	L	....
	""WA1600 Opt	Opt	60000	....	11.00/24D	12.00/24	Optional	....	....	....	....	....	△	....	Tim SFD 4600	2F	L	....
Peterbilt (D)	350 193	Opt	36000	....	10.00/20D	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	Tim SW-3456	WF	R	6.16-6.80
(D)	360 198	Opt	36000	....	10.00/20D	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	Tim SW-459	WF	R	6.16-6.80
(D)	381 194	Opt	44000	....	10.00/20D	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	Tim SFD 4600	2F	R	** -10.16
(D)	330 (coe) 135	Opt	36000	....	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	SW 3456	WF	R	6.16-6.80
(D)	351 190	Opt	36000	13200	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8045	12	Tim SW3458	....	....	6.16-7.35
(D)	360 (coe) 135	Opt	36000	....	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	SW 459	WF	R	6.16-6.80
Ree	F-206 150	185	28000	^8940	8.22.5	9/22.5	Own 3310A‡	6-4½x4½	331	6.4	264	140-3200	Cla 205V	....	Tim SDHD	HF	T	6.8-7.8
	F-216 150	185	35000	^9810	9/22.5	10/22.5	Own 3310A‡‡	6-4½x4½	331	6.4	264	140-3200	Cla 205V	....	Eat 28M	SF	T	6.08-7.79
	F-226 150	203	42000	^10170	10/22.5	11/22.5	Own 3310A‡	6-4½x4½	331	6.4	264	140-3200	Cla 205V	....	Tim SLHD	HF	T	7.8-8.6

For references and abbreviations see page 140

For Directory of the Truck Manufacturers listed above, see Table of Contents

1957 TRUCK SPECIFICATIONS — *concluded*

MAKE AND MODEL	WHEEL-BASE		Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES		ENGINE DETAILS						TRANSMISSION		REAR AXLE			
					D-dual rear S-single rear													
	Minimum Standard	Maximum Standard			Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Six-Wheelers—Cont'd																		
Reo—Cont'd																		
F-226 (6x6)	150	203	42000	▲12000	10/22.5	11/22.5	Own 3310A‡‡	6-4½x4½	331	6.4	284	140-3200	Cla 205V	...	Tim SLD	H2F	T	7.67-9.33
F-50 (6x2)	140	185	40000	▲10755	10/22.5	11/22.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Spl 3152	...	T SQTT-235+	HF2	T	6.43-6.91
F-50T (6x2)	140	185	40000	▲11235	10/22.5	11/22.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Spl 3152	...	T SQTT-335	hf2d	T	6.63-6.81
F-506	150	203	42000	▲10365	10/22.5	11/22.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Cla 290V	...	Tim SLHD	HF	T	7.8-9.6
F-506D	155	203	42000	▲11530	10/22.5	11/22.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A65	...	Tim SLHD	HF	T	5.28-7.6
F-506M	150	203	47000	▲10830	12/22.5	11/22.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Cla 290V	...	Tim SLHD	HF	T	7.8-9.6
F-506-OH	150	203	42000	▲12070	10.00/20	...	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Cla 290V	...	Tim SLD	HF2	T	7.67-9.33
F-506 (6x6) OH	150	203	42000	▲12750	10.00/20	...	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Cla 290V	...	Tim SLD	HF2	T	7.67-9.33
F-536	155	200	46000	▲12250	11/22.5	12/24.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Cla 290V	...	Eat 36M	SF	T	7.62-8.49
F-536D	155	200	46000	▲13510	11/22.5	12/24.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A65	...	Eat 36M	SF	T	7.62-8.49
F-536M	155	200	50000	▲12400	11/22.5	12/24.5	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Cla 290V	...	Eat 36M	SF	T	7.62-8.49
F-536-OH	155	200	46000	▲12795	11.00/20	11.00/22	Own OH170■	6-4½x4½	331	7.5	297	170-3400	Cla 290V	...	Eat 36M	SF	T	7.62-8.49
F-536D-OH	155	200	46000	▲14130	11.00/20	11.00/22	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A65	...	Eat 36M	SF	T	7.62-8.49
A-620	139	199	40000	▲11470	10/22.5	11/22.5	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim SQTT235+	HF2	T	6.43-6.91
A-623	133	151	40000	▲11915	10/22.5	11/22.5	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim SQTT335	hf2d	T	6.0-6.51
A-630	151	199	42000	▲11310	10/22.5	11/22.5	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim SLHD	HF	T	6.16-8.6
A-630-OH	151	199	42000	▲12640	10.00/20	...	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim SLD	HF2	T	7.67-9.33
A-633	139	187	42000	▲11965	10/22.5	11/22.5	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Tim SLHD	HF	T	6.16-8.6
A-633D	145	187	42000	▲12085	10/22.5	11/22.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu 5A65	...	Tim SLHD	HF	T	5.28-6.83
(c.o.e.) AC-633	130	172	42000	▲12210	10/22.5	11/22.5	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu R-46	...	Tim SLHD	HF	T	6.16-8.6
(c.o.e.) AC-633D	136	172	42000	▲12890	10/22.5	11/22.5	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Fu R-46	...	Tim SLHD	HF	T	5.28-6.83
A-730	151	199	46000	▲12725	11/22.5	12/24.5	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Eat 36M	SF	T	7.62-8.49
A-730-OH	151	199	46000	▲13270	11.00/20	11.00/22	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Eat 36M	SF	T	7.62-8.49
A-733	139	187	45000	▲13435	11/22.5	12/24.5	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu 5A65	...	Eat 36M	SF	T	7.62-8.49
(c.o.e.) AC-733	130	172	45000	▲13200	11/22.5	12/24.5	Own OV207▼	6-3⅞x4½	390	7.3	354	207-3400	Fu R-46	...	Eat 36M	SF	T	7.62-8.49
A-830-OH	151	199	60000	▲15925	11.00/24	12.00/24	Own OV235	6-4½x4½	440	7.3	412	235-3400	Fu 5A65	...	Eat 42M	HF2	T	** 10.12
Truckstell																		
(C) F600 4R	155	221	28000	▲7960	8/22.5	9/22.5	Ford	6-3.62x3	223	7.8	202	133-4000	Ford++	12	Ford	HF	L	** 6.8
(C) F700 4R	157	225	32000	▲8980	8/22.5	9/22.5	Ford	3-3.62x3.3	272	7.6	247	158-3800	Ford++	12	Ford	HF	L	** 7.2
(C) F750 4R	157	225	34000	▲9350	9/22.5	10/22.5	Ford	6-3.62x3.3	302	7.5	279	175-3800	Ford++	15	Ford	HF	L	** 7.2
(C) F800 4R	157	225	40000	▲10170	10/22.5	11/22.5	Ford	6-3.8x3.7	332	7.5	306	190-3800	Ford++	15	Ford	SF	L	** 7.2
(C) F900 4R	157	225	48000	▲11640	11/22.5	11/22.5	Ford	6-3.8x3.7	332	7.5	306	190-3800	Ford++	15	Ford	SF	L	** 7.67
(C) C5403 4R	138	205	28000	▲7650	8/22.5	9/22.5	Chev.	6-3.75x3	265	7.5	249	155-4200	Chev.++	12	Chev.	HF	L	** 8.17
(C) C6103 4R	155	225	32000	▲7800	8/22.5	9/22.5	Chev.	6-3.56x3.9	236	8.0	210	140-4200	Chev.++	12	Chev.	HF	L	** 8.17
(C) C7103 4R	138	205	34000	▲8170	8/22.5	10/22.6	Chev.	6-3.75x3	265	7.5	249	155-4200	Chev.++	12	Chev.	HF	L	** 8.17
(C) C8103 4R	158	225	34000	▲8350	8/22.5	10/22.5	Chev.	6-3.75x3	265	7.5	249	155-4200	Chev.++	12	Chev.	HF	L	** 8.17
(C) C9103 4R	138	205	48000	▲10250	9/22.5	11/22.5	Chev.	6-4x3.19	322	7.7	310	195-4000	Chev.++	15	Chev.	SF	L	** 7.17
(C) C10103 4R	158	225	48000	▲11000	9/22.5	11/22.5	Chev.	6-4x3.19	322	7.7	310	195-4000	Chev.++	15	Chev.	SF	L	** 7.17
Ward La Fr. DIT‡	180	220	39500	...	10.00/20	11.00/20	Con T6427	6-4⅜x4½	427	...	340	152-2600	Fu 5A43‡‡	15	Tim SD3010P	2F	L	** 8.27
D3T‡‡	180	220	39500	...	10.00/20	11.00/20	Con R6572	6-4¾x5⅛	572	...	440	198-2600	Fu 5C65‡‡	15	Tim SD3010P	2F	L	** 7.50
D3ST‡‡	180	220	39500	...	10.00/20	11.00/20	Con R6602	6-4⅝x5⅛	602	...	483	206-2600	Fu 5C65‡‡	15	Tim SD3010P	2F	L	** 7.50
(D) D5T‡‡	180	220	42000	...	11.00/20	11.00/20	Cum HB600	6-4½x6	672	...	500	150-1800	Fu 5C72‡‡	15	Tim SD3010P	2F	L	** 6.84
(D) D5RT‡‡	180	220	42000	...	11.00/20	11.00/20	Cum HRB600	6-5½x6	743	...	540	165-1800	Fu 5C72‡‡	15	Tim SD3010P	2F	L	** 6.84
(D) D5NT‡‡	180	220	42000	...	11.00/20	11.00/20	Cum NHB600	6-5½x6	743	...	540	200-2100	Fu 5C72‡‡	15	T SW3012PA	WF	L	** 8.17
White-Freightliner																		
WF64	196		...	13470	10.00/20	...	Cum NHB	6-5½x6	743	13.0	575	200-2100	Spl 8041	12	Tim SQW	WF	H	** 8⅛
WF64T	156	248	...	13240	10.00/20	...	Cum NHB	6-5½x6	743	13.0	575	200-2100	Fu R95C	10	Tim SQW	WF	H	** 8⅛
WF6542T	115	120	...	10560	10.00/20	...	Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	8	Tim R330	SFD	H	4.77-6.38
WF7564T	156	248	...	13230	10.00/20	...	Cum NHB	6-5½x6	743	13.0	575	200-2100	Fu R95C	10	Rim SQW	WF	H	** 8⅛
WF5842T	115	120	...	10640	10.00/20	...	Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	8	Tim R330	SFD	H	4.77-6.38
WF5844	115¾		...	12030	10.00/20	...	Cum NHB	6-5½x6	743	13.0	575	200-2100	Fui R95C	10	Tim R230	SFD	H	** 5.54
WF6564	196		...	13440	10.00/20	...	Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	12	Tim SQW	WF	H	** 8⅛
WF7564	196		...	13470	10.00/20	...	Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	12	Tim SQW	WF	H	** 8⅛

For references and abbreviations see page 140

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Number of Car, Truck, and Bus Drivers in the U. S. A.

Estimated by the U. S. Bureau of Public Roads

State	Total Licenses in Use	State	Total Licenses in Use	State	Total Licenses in Use
Alabama	1,201,515	Massachusetts	2,002,690	South Carolina	1,089,610
Arizona	477,722	Michigan	3,195,985	South Dakota	415,130
Arkansas	743,721	Minnesota	1,797,759	Tennessee	1,425,273
California	6,631,453	Mississippi	688,824	Texas	3,874,634
Colorado	896,268	Missouri	2,054,641	Utah	396,291
Connecticut	1,108,718	Montana	330,662	Vermont	160,237
Delaware	191,694	Nebraska	789,552	Virginia	1,540,751
District of Columbia	333,749	Nevada	143,393	Washington	1,251,083
Florida	1,882,318	New Hampshire	281,277	West Virginia	908,438
Georgia	1,596,537	New Jersey	2,385,533	Wisconsin	1,731,180
Idaho	357,325	New Mexico	397,291	Wyoming	215,122
Illinois	4,254,313	New York	6,143,862		
Indiana	2,204,668	North Carolina	1,720,199	Total—1955	74,685,949
Iowa	1,365,395	North Dakota	318,134	Total—1954	72,182,560
Kansas	1,315,646	Ohio	4,218,899	Total—1953	69,989,781
Kentucky	1,138,038	Oklahoma	1,092,123	Total—1952	66,825,829
Louisiana	1,063,722	Oregon	850,617	Total—1951	64,443,781
Maine	391,231	Pennsylvania	4,640,033	Total—1950	62,193,495
Maryland	1,191,856	Rhode Island	380,421	Total—1949	59,322,278

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BUSES \ 1957

CITY AND INTERCITY

Line Number	BUS MAKE AND MODEL	GENERAL: Passenger Rating	Type (City Service, Parlor, etc.)	Standard Wheelbase (In.)	Overall Length (In.)—Bumper to Bumper	Inside Length (In.)—Passenger Compartment	Tread (In.)—Front and Rear	Complete Vehicle Weight—Dry (Lb.)	Standard Tire Size (In.)—Front and Rear	ENGINE: Make and Model	Cycle and Fuel	Location	Number of Cylinders—Bore and Stroke (In.)	Displacement (Cu. In.)	Rated Horsepower (A.M.A.)	Maximum Brake Hp. at Governed R.P.M.	Maximum Net Torque (Lb. Ft.) at Specified R.P.M.	Compression Ratio—to 1	Compression Pressure—(Lb.) at Specified R.P.M.	Valve Arrangement	Oiling System: Pressure to—
1	Beck Airglide Mainliner	37	IC	228	420	358	80¼–71½	18500	11.00/20	Cum JT-6	4-D	R	6-4½x5	401	10.8	175-2500	400-1700	15.5		I	abcd
2	Semi-Deck & Half	41	IC	228	420	376	80¼–72	20000	11.00/20	Cum JT-6	4-D	R	6-4½x5	401	10.6	175-2500	400-1700	15.5		I	abcd
3	Deck & Half	45	IC	256	480	438	80¼–72	28000	11.00/22	Cum NRT-6	4-D	R	6-5½x6	743	63.1	300-2100	800-1400	12.0		I	abcd
4	Crown A-501-10	37-41	IC	200½	384	353½	80¼–72	18500	10.00/20	Int 501	4-G	UF	6-4¼x5½	501	18.8	212-3000	145-1400	6.50		I	acd
5	A-590-10	33-41	IC	200½	384	353½	80¼–72	18500	9.00/20	HS 590SH1	4-G	UF	6-5x5	590	60.0	232-2800	190-1600	6.70		I	acdef
6	A-501-11	37-45	IC	232	419½	388	80¼–72	19200	11.00/20	Int 501	4-G	UF	6-4¼x5½	501	18.6	212-3000	145-1400	6.50		I	acd
7	A-590-11	37-45	IC	232	419½	388	80¼–72	19200	11.00/20	HS 590SH1	4-G	UF	6-5x5	590	60.0	232-2800	190-1600	6.70		I	acdef
8	A-779-11	37-45	IC	232	419½	388	80¼–72	20500	11.00/22	HS 190-2	4-G	UF	6-5¼x6	779	29.8	246-2400	640-1400	6.10		I	acdef
9	AD-743-11	37-45	IC	232	419½	388	80¼–72	21200	11.00/22	Cum NHHB600	4-D	UF	6-5½x6	743	27.0	210-2100	570-1600	15.5		I	abcd
10	Fitzjohn FTG Cityliner	29-31	CS	155¼	323¼	277	81 A–74	12000	8.25/20	Her JXLD	4-G	TR	6-4x4½	339	38.4	131-3000	272-1400	6.20		L	abcdg
11	FTG Cityliner	29-31	CS	155¼	323¼	277	81 A–74	12400	8.25/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
12	FTG Cityliner	33-35	CS	182½	351	304¾	81 A–74	12750	9.00/20	Her JXLD	4-G	TR	6-4x4½	339	38.4	131-3000	272-1400	6.20		L	abcdg
13	FTG Cityliner	33-35	CS	182½	351	304¾	81 A–74	13150	9.00/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
14	FTD Cityliner	33-35	CS	182½	351	304¾	81 A–74	13800	9.00/20	Cum JBS600	4-D	R	6-4½x5	401	40.8	150-2500	360-1500	15.5		I	abcd
15	FTD Cityliner	37-39	CS	210¼	378¾	332½	81 A–74	13900	10.00/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
16	FTD Cityliner	37-39	CS	210¼	378¾	332½	81 A–74	14550	10.00/20	Cum JBS600	4-D	R	6-4½x5	401	40.8	150-2500	360-1500	15.5		I	abcd
17	FSG Suburbanliner	29	Sub	155¼	325¼	277	81 A–74	12500	8.25/20	Her JXLD	4-G	TR	6-4x4½	339	38.4	131-3000	272-1400	6.20		L	abcdg
18	FSG Suburbanliner	29	Sub	155¼	325¼	277	81 A–74	12900	8.25/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
19	FSG Suburbanliner	33	Sub	182½	351	304¾	81 A–74	13250	9.00/20	Her JXLD	4-G	TR	6-4x4½	339	38.4	131-3000	272-1400	6.20		L	abcdg
20	FSG Suburbanliner	33	Sub	182½	351	304¾	81 A–74	13650	9.00/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
21	FSG Suburbanliner	37	Sub	210¼	378¾	332½	81 A–74	14400	10.00/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
22	Roadrunner	33	P	201	384	324	80¼–71½	17650	10.00/20	Wau 140GKB	4-G	R	6-4½x5½	525	48.6	177-2600	125-1000	6.50		I	abcdfg
23	Roadrunner	33	P	201	384	324	80¼–71½	17750	10.00/20	Cum JBS600	4-D	R	6-4½x5	401	10.8	150-2500	360-1500	15.5		I	abcd
24	Roadrunner	37	P	237	420	360	80¼–71½	18850	11.00/20	Wau 140GKB	4-G	R	6-4½x5½	525	48.6	177-2600	425-1000	6.50		I	abcdfg
25	Roadrunner	37	P	237	420	360	80¼–71½	18750	11.00/20	Cum JT6B	4-D	R	6-4½x5	401	10.8	165-2500	400-1800	15.5		I	abcd
26	Flxible 218WA1	29	IC	218	410⅝	300	80¼–69¾	16100	9.00/20	Whi WA390	4-G	R	6-4⅝x5	531	54.2	200-2900	440-1400	6.40		L	abcdf
27	218GM1	29	IC	218	410⅝	300	80¼–69¾		9.00/20	GM 4-71	2-D	R	4-4¼x5	284	26.9	150-2100	387-1600	16.0		I	abcd
28	228JTI-56	37	IC	228	419½	401½	80¼–71½	18200	10.00/20	Cum JT600	4-D	R	6-4½x5	401	43.3	175-2500	405-1800	15.5		I	abcd
29	228F1-56	37	IC	228	419½	401½	80¼–71½	18200	10.00/20	Fag FTC200	4-G	R	6-4⅝x5	451	45.9	200-2800	400-1600	7.28	155–250	I	abcd
30	Flxible-Twin Coach FT-33	48	CS	222	403	378	80¾–72	15800	10.00/20	Fag FTC-200	4-G	UF	6-4⅝x5	451	45.9	200-2800	400-1600	7.28		I	.....
31	FT-35	44	CS	232½	420	402	80¾–72	16800	10.00/20	Fag FTC-200	4-G	UF	6-4⅝x5	451	45.9	200-2800	400-1600	7.28		I	.....
32	FT-40	52	CS	274¾	480	462	80¾–72	18500	11.00/20	Fag FTC-210	4-G	UF	6-4½x5	477	48.6	210-2800	480-1600	7.09		I	.....
33	FT-40DL	52	CS	274¾	480	462	80¾–72	18500	11.00/20	Fag FLDH600	4-D	UF	6-4[½x5½	587	55.5	160-2225	455-1200	15.8	450-300	I	abcd
34	G.M.C. TGH3102	31	CS	180½	325½	287	81¼–75¼	9635	8.25/20	Own 270	4-G	TR	6-3¾x4	270	34.3	124-3200	232-1000	7.75	185-1000	I	abcdfgh
35	TDH3714	37	CS	210½	369½	336	79¼–70½	16075	10.00/20	Own 4-71	2-D	TR	4-4¼x5	284	26.9	143-2100	344-1600	17.0	385-500	I	abcdfgh
36	TDH4512	45	CS	238¾	420	389	78¼–70½	17170	10.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	172-2000	472-1200	17.0	385-500	I	abcdfgh
37	TDM4515	45	Sub	238¾	420	389	78¼–70½	19060	10.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	211-2000	574-1600	17.0	385-500	I	abcdfgh
38	TDH5105	51	CS	281¾	477	441	87¼–76½	18655	11.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	172-2000	472-1200	17.0	385-500	I	abcdfgh
39	TDH5106	51	CS	281¾	477	441	80¾–70½	18445	11.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	172-2000	472-1200	17.0	385-500	I	abcdfgh
40	TDM5109	51	Sub	281¾	477	441	80¾–70½	20625	11.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	211-2000	574-1600	17.0	385-500	I	abcdfgh
41	PD4104	41	P	261	420	390	78¼–70½	19310	11.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	211-2000	574-1600	17.0	385-500	I	abcdfgh
42	Mack C-41	41	CS	237½	396	368⅝	79[½–70¾	18000	10.00/20	Own. END673[1]	4-D	TR	6-4⅞x6	672	57.0	170-2100	480-1200	16.6	530-1000	I	acdeh
43	C-47	45	CS	261½	420	390⅝	79[½–70⅝	18500	10.00/20	Own. END673[2]	4-D	TR	6-4⅞x6	672	57.0	170-2100	480-1200	16.6	530-1000	I	acdeh
44	C-49	51	CS	289½	472[½	443	79[½–70⅝	20250	11.00/20	Own. END673[2]	4-D	TR	6-4⅞x6	672	57.0	170-2100	480-1200	16.6	530-1000	I	acdeh
45	Southern Coach S-45-DHC	45	CS	232[¾	419	404	80¼–72	18714	11.00/22	Cum NHHB600	4-D	UF	6-5½x6	743	63.0	200-2100	535-1200	15.5		I	abcdf
46	S-36-DHL	36	CS	194[⅛	356½	341½	80¼–71½	14480	10.00/20	Fag FLDH600	D	UF	6-4[½x5½	587	55.2	160-2400	452-1200	15.8		I	acdfgi
47	S-41-HF	41	CS	221[⅝	391½	377½	80¾–72	15300	11.00/20	Fag FTC180	4-G	UF	6-4¼x4¾	404	43.4	180-2400	390-1600	7.50		I	acdf
48	S-50-DHC	50	CS	275[⅝	461½	447	86¾–72	21310	11.00/22	Cum NHHB600	4-D	UF	6-5½x6	743	63.0	200-2100	535-1200	15.5		I	abcdf
49	R-37	33	CS	182½	356½	316½	80¼–71½	14530	10.00/20	Int RD450	4-G	R	6-4⅝x5	451	45.9	182-3000	388-1600	6.50	388-1600	I	abcdf

ABBREVIATIONS

‡—Two used.
‡—Torque converter.
‡—Generator, Delco-Remy; starter, Auto-Lite.
†—Front, 14½; rear, 15.
•—Hundred rpm.
^—Air suspension.
1—EN510A propane engine optional.
2—EN510A propane and ENDT673 diesel engines optional.
3—Four speed mechanical transmission optional.
a—Main bearings.
b—Wrist pins.
c—Connecting rods.
d—Camshaft.
e—Accessory drive.
f—Valve lifters or rocker arms and shafts.
g—Timing gears or chain.
h—Air compressor.
i—Balancer shaft.
A—Air.
AL—Electric Auto-Lite Co.
BB—Borg & Beck.
BL—Brown-Lipe.
Bos—American Bosch Div.
Ce—Centrifugal.
CIC—City and intercity service.
Cla—Clark Equipment Co.
CS—City service.
Cum—Cummins Engine Co.
D—Diesel fuel.
Do—Downdraft.
DR—Delco-Remy Div.
Ds—Drive shaft.
Dup—Duplex.
Fag—Fageol.
Fu—Fuller Mfg. Co.

For Directory of Bus Manufacturers listed above, see Table of Contents

Intercity Passenger Miles Traveled, by Types of Transportation

As reported by National Association of Motor Bus Operators

Billions of Miles

Year	Total Intercity Travel	Automobiles	Public Carriers: Total	Railroads	Intercity Buses	Air Lines	Waterways
1955	664.1	585.8	78.2	28.7	25.1	22.7	1.7
1954	625.1	548.8	76.4	29.5	25.6	19.6	1.7
1953	608.8	529.2	79.6	32.3	28.4	17.4	1.5
1952	575.3	495.5	79.8	34.7	28.7	15.0	1.4
1951	534.7	457.8	76.9	35.3	27.4	12.9	1.3
1950	473.0	402.8	70.2	32.5	26.4	13.1	1.2
1949	450.2	376.3	73.9	33.0	27.9	8.6	1.4

1957 / BUSES

CITY AND INTERCITY

FUEL SYSTEM			ELECTRICAL SYSTEM			Gov-ernor			TRANSMISSION				Uni-versals		REAR AXLE			BRAKES					SPRINGS				RUNNING GEAR			
Carburetor or Injector Pump					Battery													Service			Hand		Front		Rear					
Make and Type	Size (In.)	Tank Capacity (Gal.)	Ignition System—Make	Generator and Starter—Make	Voltage and Amp. Hours Capacity	Type	Max. Governed Speed—M.P.H.	Clutch—Make and Size (In. diam.)	Make	No. of Forward Speeds	Low Speed Ratio—to 1	Type	Number	Size of Series	Make and Model	Standard Gear Ratio—to 1	Type of Applicator	Total Lining Area (Sq. In.)	Drum Diam. (In.)	Operates on—	Total Lining Area (Sq. In.)	No. of Leaves	Length and Width (In.)	No. of Leaves	Length and Width (In.)	Front Axle—Make	Steering Gear—Make	Outside Diameter of Min. Turn. Circle (Ft.)	Line Number
Cum				LN	12-155	M	68	LR 15	Fu	4	4.43	M	2	1600	Tim L110	4.44	A		16½	Ds		△		△		Tim	Ro		1
Cum				LN	12-155	M	65	LR 15	Fu	4	4.43	M	2	1600	Tim Q110	4.62	A		16½	Ds		△		△		Tim	Ro		2
Cum		50		LN	12-155	M	65	Lg 17	Spi	4	5.19	M	2	1700	Tim R110	4.11	A		16½	Ds		△		△		Tim	Ro		3
Hol. Do	1¼	70	TR	♦	12-158	Su	Var	LR 15	Fu	5	8.06	M	2	1600	Tim L110P	5.29	A	704	16½	Ds	65	11	50-4	17	60-4	Tim	Ro	70	4
Hol. Do	1¼	70	DR	♦	12-158	Su	Var	Lg 15½	Fu	5	8.06	H	2	1700	Tim Q110P	4.63	A	704	16½	Ds	65	11	50-4	17	60-4	Tim	Ro	78	5
Hol. Do	1¼	70	DR	♦	12-158	Su	Var	LR 15	Fu	5	8.06	M	2	1600	Tim L110P	5.29	A	704	16½	Ds	65	11	50-4	17	60-4	Tim	Ro	78	6
Hol. Do	1¼	70	DR	♦	12-158	Su	Var	LR 15½	Fu	5	8.06	H	2	1700	Tim Q110P	4.63	A	704	16½	Ds	65	11	50-4	17	60-4	Tim	Ro	78	7
Zen. Up	2	70	DR	♦	12-158	V	Var	Lg 17	Fu	5	7.33	M	2	1700	Tim R110P	4.11	A	704	16½	Ds	65	12	50-4	18	60-4	Tim	Ro	78	8
Cum		70	AL	♦	12-158		Var	Lg 17	Fu	5	7.33	M	2	1700	Tim R110P	4.11	A	704	16½	Ds	65	12	50-4	18	60-4	Tim	Ro	78	9
Zen. Up	1¾	60	DR	DR	12-160	Ce	53	SB 13	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	14	54-3	14	60-3	Tim	Ro	57	10
Zen. Do	1¾	60	DR	LD	12-160	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	14	54-3	14	60-3	Tim	Ro	65	11
Zen. Up	1¾	60	DR	DR	12-160	Ce	53	SB 13	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	14	54-3	14	60-3	Tim	Ro	65	12
Zen. Do	1¾	60	DR	LD	12-160	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	14	54-3	14	60-3	Tim	Ro	65	13
Zen. Do	1¾	60	DR	LD	12-160	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	15	54-3	15	60-3	Tim	Ro	65	14
Cum		60		LD	12-160A	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	15	54-3	15	51-3	Tim	Ro	73¾	15
Zen. Do	1¾	60	DR	LD	12-160	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	15	54-3	15	60-3	Tim	Ro	73¾	16
Cum		60		LD	12-160A	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	15	54-3	15	54-3	Tim	Ro	57	17
Zen. Up	1¾	60	DR	DR	12-160	Ce	53	SB 13	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	14	54-3	14	54-3	Tim	Ro	57	18
Zen. Do	1¾	60	DR	LD	12-160	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	14	54-3	14	54-3	Tim	Ro	65	19
Zen. Up	1¾	60	DR	DR	12-160	Ce	53	SB 13	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	14	54-3	14	54-3	Tim	Ro	65	20
Zen. Do	1¾	60	DR	LD	12-160	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	15	54-3	15	54-3	Tim	Ro	77¾	21
Zen. Do	1¾	60	DR	LD	12-160	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim S8434W	6.16	A	586	14½	Ds	85	15	54-3	15	54-3	Tim	Ro	73¾	22
Zen. Do	1¾	142	LD	LD	12-160	Ce	68	Lg 14	Cla	4	4.88	M	2	1600	Tim L110	4.44	A	694	16½	Ds	137	△		△		Tim	Ro	71	23
Cum		142		LD	12-160A	Ce	68	Lg 14	Cla	4	4.88	M	2	1600	Tim L110	4.44	A	694	16½	Ds	137	△		△		Tim	Ro	80	24
Zen. Do	1¾	142		LD	12-160	Ce	68	LR 15	Cla	4	4.88	M	2	1600	Tim L110	4.44	A	694	16½	Ds	137	△		△		Tim	Ro	80	25
Cum	1¾	142		LD	12-160A	Ce	68	LR 15	Cla	4	4.88	M	2	1600	Tim L110	4.44	A	694	16½	Ds	137	△		△		Tim	Ro	80	26
Dup. Do	1¾	90	DR	DR	12-160	Ce	69	Lg 15½	Cla	4	4.35	M	2	1600	Tim H143P	4.62	A	610	16½	Ds	45	△		△		Tim	Ro	76	26
GM		90	DR	DR	12-160	Ce	66	Lg 15½	Spi	5	5.08	M	2	1500	Tim H143	4.62	A	610	16½	Ds	45	△		△		Tim	Ro	76	27
Cum		120		DR	12-160	Ce	67	Spi 14	Spi	5	4.50	M	2	1600	Tim L110	5.28	A	792	16½	Ds	45	△		△		Tim	Ro	81	28
Hol. Do		120	DR	DR	12-160	Ce	64	Spi 14	Spi	5	4.50	M	2	1600	Tim L110	6.16	A	792	16½	Ds	45	△		△		Tim	Ro	81	29
Hol. Do		125	DR*	LD	12-160	Ce	28°	None	Spi‡		5.43	H	2	1600	Tim Q110	6.16	A	844	16½	Ds	63	13	56-4	13	56-4		Ro	67½	30
Hol. Do			DR	LD	12-160	Ce	28°	None	Spi‡		5.43	H	2	1600	Tim Q110	6.16	A	844	16½	Ds	63	12	60-4	13	64-4	Tim	Ro	69½	31
Hol. Do			DR	LD	12-160	Ce			Spi‡		5.43	H	2	1600	Tim R110	6.16	A	844	16½	Ds	63	13	60-4	15	64-4	Tim	Ro	79½	32
Ros		125		LN	12-160	Ce	23°	None	Spi‡		5.43	H	2	1600	Tim R110	6.17	A	844	16½	Ds	63	13	60-4	15	64-4	Tim	Ro	79½	33
Zen. Do	1½	60	DR	DR	12-150	Ce	52		GM	4	3.82	GH	2	1400	Cla 130017	6.33	A	587	14½	Ds	28	10	52-3	11	59-3	Cla	Sag	66	34
Own		80		DR	12-175A	Ce	46	Own 15	GM‡			H	2	1600	Tim S7620W	5.16	A	648	14½	Ds	89	△		△		Tim	Sag	70	35
Own		90		DR	12-175A	Ce	48	Own 15	GM‡	If		H	2	1700	Tim S8620W	4.71	A	705	14½	Ds	104	△		△		Tim	Sag	78	36
Own		80		DR	12-175A	Ce	57	Lg 17	Spi	4	4.38	M	2	1700	Tim S8620W	4.13	A	705	14½	Ds	104	△		△		Tim	Sag	78	37
Own		80		DR	12-175A	Ce	45	Own 15	GM‡	If		H	2	1700	Tim S9721W	5.14	A	882	14½	Ds	104	△		△		Tim	Sag	62	38
Own		80		DR	12-175A	Ce	45	Own 15	GM‡	If		H	2	1700	Tim S9720W	5.14	A	882	14½	Ds	104	△		△		Tim	Sag	61	39
Own		80		DR	12-175A	Ce	58½	Lg 17	Spi	4	4.38	M	2	1700	Tim S9610W	4.13	A	882	14½	Ds	104	△		△		Tim	Sag	61	40
Own		100		DR	12-205A	Ce	58½	Lg 17	Spi	4	3.88	M	2	1700	Tim S9600W	4.13	A	764	14½	Ds	125½	△		△		Tim	Ro	84	41
Bos		80			12-200	Ce	24°	Spi 16	Spi‡³	If		H	2	1700	Own RAS402	Var	A	784	15	Ds	139	△		△		Own	Gem	67	42
Bos		80			12-200	Ce	21°	Spi 16	Spi‡³	If		H	2	1700	Own RAS402	Var	A	784	15	Ds	139	△		△		Own	Gem	72	43
Bos		80			12-200	Ce	21°	Spi 16	Spi‡³	If		H	2	1700	Own RAS402	Var	A	843	15	Ds	139	△		△		Own	Gem	74½	44
Cum		115		Op	12-168	Ce	41	Spi 16	Spi‡	If		H	2	1700	Tim R110WX8	6.83	A	748	16½	Ds	126	13	62-3½	16	70-4	Tim	Ro	84½	45
Rea		115		Op	12-168		41	Spi 14	Spi‡	If		H	2	1600	Tim L110P	6.16	A	622	16½	Ds	101	11	62-3½	12	70-4	Tim	Ro	71½	46
Hol. Do		115	Mal	Op	12-168	Su	41	Spi 14	Spi‡	If		H	2	1600	Tim Q110P	6.83	A	685	16½	Ds	101	12	62-3½	14	70-4	Tim	Ro	80	47
Cum		115		On	12-168	Ce	41	Spi 16	Spi‡	If		H	2	1700	Tim R110W	6.83	A	904	16½	Ds	126	▲		▲		Tim	Ro	82½	48
Hol. Do		75	DR	LN	12-168	Su	50	BL 14	Spi	3	3.80	H	2	1500	Tim L110	6.16	A	684	16½	Ds	96	10	62-3½	14	70-4	Tim	Ro	63	49

G—Gasoline.
Gem—Gemmer Mfg. Co.
GH—G. M. Hydramatic.
GM—General Motors Corp.
H—Hydraulic.
Her—Hercules Motor Corp.
Hol—Holley Carburetor Co.
HS—Hall-Scott.
I—Valve in head.
IC—Intercity service.
If—Infinite.
Int—International Harvester Co.
L—Valves in side.
LD—Leece-Neville (alternator); Delco-Remy (starter).
Lg—Long Mfg. Div.
LN—Leece-Neville Co.
LR—Lipe Rollway Corp.
M—Mechanical.
Mal—Mallory.
Op—Optional.
P—Parlor.
R—Rear.
Ro—Ross Gear and Tool Co.
Ros—Roosa-Master.
Sag—Saginaw Steering Gear Div.
Spi—Spicer Mfg. Div.
Su—Suction.
Sub—Suburban service.
Tim—Timken Detroit Axle Co.
TR—Transverse in rear.
UF—Under floor.
Up—Updraft.
V—Vacuum.
Var—Variable.
Wau—Waukesha Motor Co.
Whi—White Motor Co.
Zen—Zenith Carburetor Div.

For Directory of Bus Manufacturers listed above, see Table of Contents

Percentage Distribution of Intercity Travel

As reported by National Association of Motor Bus Operators

Year	Total Intercity Travel	Automobiles	Public Carriers				
			Total	Railroads	Intercity buses	Air Lines	Waterways
1955	100.0	86.2	11.8	4.3	3.8	3.4	0.3
1954	100.0	87.8	12.2	4.7	4.1	3.1	0.3
1953	100.0	86.9	13.1	5.3	4.7	2.8	0.3
1952	100.0	86.1	13.9	6.0	5.0	2.6	0.3
1951	100.0	85.6	14.4	6.6	5.1	2.4	0.3
1950	100.0	85.2	14.8	6.9	5.6	2.1	0.2
1949	100.0	83.6	16.4	8.0	6.2	1.9	0.3

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1957 / TRACTORS

WHEEL TYPES

Travel Speeds at Normal Governed Engine R.P.M. with Standard Wheels				ENGINE							FUEL										BELT PULLEY				CAPACITIES							
Fourth	Fifth	Sixth	Reverse	Make and Model	Number of Cylinders—Bore and Stroke (In.)	Piston Disp. (Cu. In.)	R.P.M. at Governed Speed	Valve Arrangement	Number of Main Bearings	Diameter of Main Bearings	Standard	Optional	Ignition—Make	Carburetor or Injector Pump—Make	Air Cleaner—Make	Governor—Make	Oiling System—Make	Cooling System—Type	Clutch—Make and Type	Final Drive—Type	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts.)	Starting Method	Line Number
.....	.....	.....	3.80	Own...1B	4-3⅝x3½	125	1500	I	3	2¼	G	.....	FM	Zen	Don	Own	P	Pu	Roc...SP	SG	8	5½	1130	FK	2	13	4	7	4+	Ele	1
.....	.....	.....	3.00	Own...B	4-3⅝x3½	125	1500	I	3	2¼	G,D	.....	FM	Zen	Don	Own	P	Pu	Roc...SP	SG	8	5½	1130	FK	2	13	4	6	††¼	Ele	2
11.25	.....	.....	3.50	Own...CE	4-3⅝x3½	125	1650	I	3	2¼	G	K	DR	Zen	Don	Own	P	Pu	Roc...SP	SG	8	5½	1220		2	13	4	8½	††1½	Ele	3
6.91	.....	.....	1.96	Cont...N62	4-2⅝x3½	62	1800	L	2	2	G	.....	DR	Mar	Don	Cont	P	TS	Roc...SP	.....	6	4	1950	FK	1½	5	3½	8	.....	Ele	4
11.25	.....	.....	3.00	Own...WD	4-4x4½	226	1400	I	3	2½	G,D	.....	DR	Zen	Uni	Own	P	Pu	Roc...SP	SG	9	6½	1260	WS	3½	15	6	17	1¾	Ele	5
11.25	.....	.....	3.17	Bu	6-3½x4½	230	1625	I	7	2½	O	.....	.....	Bu	Uni	Bu	P	Pu	Roc...SP+	SG	9	6½	1463	WS	4¼	15	6	17	††1¾	Ele	6
12.00	.....	.....	1.22	ContGD157	4-3⅝x4⅝	157	2000	I	3	2⅝	O	.....	AL	Bos	Don	.....	P	TS	Roc...SP	CH	8½	6¼	1650	FK	5	12½	5	14	4	Ele	7
5.00	.....	.....	1.69	Cont...F162	4-3½x4⅝	162	2400	I	3	2½	G	.....	AL	Mar	Don	.....	P	TS	Roc...SP	CH	8½	6¼	1800	FK	5	12½	5	14	4	Ele	8
15.00	.....	.....	1.69	Cont...F162	4-3x4⅝	162	2400	I	3	2½	K	.....	AL	Mar	Don	.....	P	TS	Roc...SP	CH	8½	6¼	1800	FK	5	12½	5	14	†12	Ele	9
9.89	.....	.....	2.87	Own...500	6-4x5	377	1350	I	7	3	O	.....	.....	Bos	Don	Bos	P	Pu	Own...SP	CH	13	8¾	956	FK	14	30	14	63	.....	Ele	10
3.70	4.60	▲▲	▲▲	Own......	4-4x5	251	1450	I	5	.....	O	.....	AL	Bos	Don	Own	P	Pu	.....	SP SG	10½	7¼	1128	FK	7½	21	9	60	.....	Ele	11
3.70	4.60	▲▲	▲▲	Own......	4-4x5	251	1450	I	5	.....	G	D,L,P	AL	Mar	Don	Own	P	Pu	.....	SP SG	10½	7¼	1128	FK	7½	21	9	60	.....	Ele	12
3.70	4.70	♦♦	♦♦	Own......	4-4x5	251	1450	I	5	.....	O	.....	AL	Bos	Don	Own	P	Pu	.....	SP SG	10½	7¼	1128	FK	7½	21	9	60	.....	Ele	13
3.70	4.70	♦♦	♦♦	Own......	4-4x5	251	1450	I	5	.....	G	D,LP	AL	Mar	Don	Own	P	Pu	.....	SP SG	10½	7¼	1128	FK	7½	21	9	60	.....	Ele	14
11.30	.....	.....	2.80	ContGD157	4-3⅝x4⅝	157	1750	I	3	2⅝	O	.....	.....	Bos	Don	Cont	P	Pu	Spi......	SP SG	10¼	6	1190	SA	3	13	5	13	.....	Ele	15
12.40	.....	.....	3.10	ContGD157	4-3⅝x4⅝	157	1750	I	3	2⅝	O	.....	.....	Bos	Don	Cont	P	Pu	Spi......	SP SG	10¼	6	1190	SA	3	13	5	24	.....	Ele	16
11.30	.....	.....	2.80	Own...G148	4-3⅝x4½	148	1750	I	3	2½	G	D	AL	Mar	Don	Own	P	Pu	Spi......	SP SG	10¼	6	1190	SA	3	13	4	13	.....	Ele	17
12.40	.....	.....	3.10	Own...G148	4-3⅝x4½	148	1750	I	3	2½	G	D	AL	Mar	Don	Own	P	Pu	Spi......	SP SG	10¼	6	1190	SA	3	13	4	24	.....	Ele	18
5.83	7.12	13.85	3.20	Own...600	6-4x5	377	1500	I	7	3	O	LP	.....	Bos	Don	Bos	P	Pu	Own......	CH	13½	8¼	944	FK	14	30	14	72	.....	Ele	19
5.24	6.42	12.47	2.87	Own...610	6-4x5	377	1350	I	7	3	O	LP	Own	Ens	Don	Own	P	Pu	Own......	CH	13½	8¼	850	FK	14	34	14	72	.....	Ele	20
12.50	.....	.....	3.00	Cont...F140	4-3½x4⅝	140	1800	L	3	2¼	G	D	AL	Mar	Don	Novi	P	Pu	BB...SP	SG	10	6½	1160	SF	3	12½	4	8	††3	Ele	21
4.50	6.25	10.50	(o)	Bu...6B230	6-3½x4½	229	1650	I	7	2½	G	O,D,LP	AL	Zen	Don	Novi	P	Pu	BB...SP	SG	12	8½	1000	SF	4¾	21	8	40	**	Ele	22
4.32	5.95	9.85	(o)	Bu...6B273	6-3¾x4½	273	1650	I	7	2½	G	.....	AL	Zen	Don	Novi	P	Pu	BB...SP	SG	12	8½	1000	DFS	4¾	21	8	40	**	Ele	23
4.32	5.95	9.85	(o)	Bu 6DA273	6-3¾x4½	273	1650	I	7	2½	O	.....	.....	Bos	Don	Bos	P	Pu	BB...SP	SG	12	8½	1000	DFS	4¾	21	8	40	**	Ele	24
4.50	6.25	10.50	(o)	Per...L4	4-4¼x4¾	269	1650	I	3	3	O	.....	.....	.....	Don	.....	P	Pu	BB...SP	SG	12	8½	1000	FK	3¾	21	8½	40	.....	Ele	25
4.50	6.25	10.50	(o)	Own......	4-3⅝x4½	198	1650	I	5	2½	G	.....	AL	Zen	Don	Novi	P	Pu	BB...SP	SG	12	8½	1000	FK	4¾	21	5	40	.....	Ele	26
4.85	7.05	13.40	(v)	Own......	4-3⅝x4½	198	1650	I	5	2½	G	.....	AL	Zen	Don	Novi	P	Pu	BB...SP	SG	10	8¼	1200	DFS	4½	21	4¾	26	**	Ele	27
4.50	6.50	11.25	2.75	Own...60	2-5½x6¾	321	975	I	2	2⅝	G	K,D	DR	Mar	Don	Own	P	Pu	Own...MD	SG	12½	7⅝	975	SA	8½	20	8	34	.....	Ele	28
4.50	5.75	10.00	2.50	Own...520	2-4¼x5½	190	1375	I	2	2¼	G	LP,D	DR	Mar	Don	Own	P	Pu	Own...MD	SG	9½	7¼	1325	FK	4½	18	7	16	.....	Ele	29
4.50	6.50	11.50	3.00	Own...620	2-5½x6¾	303	1125	I	2	2⅝	G	LP,D	DR	Mar	Don	Own	P	Pu	Own...MD	SG	12½	7⅝	1125	FK	6½	20½	8	24	.....	Ele	30
4.25	6.00	10.50	2.25	Own...620	2-5½x6¾	303	1125	I	2	2⅝	G	LP,D	DR	Mar	Don	Own	P	Pu	Own...MD	SG	12½	7⅝	1125	SA	6½	20½	8	24	.....	Ele	31
4.50	5.75	11.33	3.00	Own...620	2-5½x6¾	303	1125	I	2	2⅝	G	LP,D	DR	Mar	Don	Own	P	Pu	Own...MD	CH	12½	7⅝	1125	DA	6½	20½	8	24	††1¾	Ele	32
4.33	5.75	11.25	3.33	Own...720	2-6x6¾	361	1125	I	2	3¼	G	LP,D	DR	Mar	Don	Own	P	Pu	Own...MD	SG	9½	7¼	1325	FK	7½	26	12	32	.....	Ele	33
4.33	5.50	11.00	3.25	Own...720	2-6x6¾	361	1125	I	2	3¼	G	LP,D	DR	Mar	Don	Own	P	Pu	Own...MD	SG	9½	7¼	1125	SA	7½	26	12	32	**	Ele	34
4.25	5.33	10.50	3.25	Own...720	2-6x6¾	361	1125	I	2	3¼	G	LP,D	DR	Mar	Don	Own	P	Pu	Own...MD	CH	9½	7¼	1125	DA	7½	26	12	32	††1¾	Ele	35
4.33	5.75	11.25	3.33	Own...720	2-6x6¾	376	1125	I	3	5	O	.....	.....	B-S	Don	Own	P	Pu	Own...MD	SG	9½	7¼	1125	FK	7	20	11	8	.....	GS	36
4.33	5.50	11.00	3.25	Own...720	2-6½x6¾	376	1125	I	3	5	O	.....	.....	B-S	Don	Own	P	Pu	Own...MD	SG	9½	7¼	1125	SA	7	20	11	8	.....	GS	37
4.25	5.33	10.50	3.25	Own...720	2-6½x6¾	376	1125	I	3	5	O	.....	.....	B-S	Don	Own	P	Pu	Own...MD	CH	9½	7¼	1125	DA	7	20	11	8	††1¾	GS	38
5.33	6.75	12.25	2.50	Own...820	2-6½x8	471	1125	I	3	4½	O	.....	.....	B-S	Don	Own	P	Pu	Own...MD	SG	12½	9	1125	SA	8¾	32½	14	13	.....	GS	39
11.30	.....	.....	2.54	Own...420	2-4¼x4	113	1850	I	2	2⅛	G	TF	DR	Mar	Don	Own	P	Pu	Au...SP	SG	9½	6¾	1270	DA	2¾	10½	5	6½	†† ¾	Ele	40
10.94	.....	.....	2.47	Own...420	2-4¼x4	113	1850	I	2	2⅛	G	TF	DR	Mar	Don	Own	P	Pu	Au...SP	SG	9½	6¾	1270	DA	2¾	10½	5	6½	††1¾	Ele	41
11.90	.....	.....	2.68	Own...420	2-4¼x4	113	1850	I	2	2⅛	G	TF	DR	Mar	Don	Own	P	Pu	Au...SP	SG	9½	6¾	1270	DF	2¾	10½	5	7½	†2	Ele	42
10.94	.....	.....	2.47	Own...420	2-4¼x4	113	1850	I	2	2⅛	G	TF	DR	Mar	Don	Own	P	Pu	Au...SP	SG	9½	6¾	1270	DA	2¾	10½	5	6½	††1¾	Ele	43
12.25	.....	.....	2.76	Own...420	2-4¼x4	113	1850	I	2	2⅛	G	TF	DR	Mar	Don	Own	P	Pu	Au...SP	SG	9½	6¾	1270	DA	2¾	10½	5	6½	††1¾	Ele	44
12.25	.....	.....	2.76	Own...420	2-4¼x4	113	1850	I	2	2⅛	G	TF	DR	Mar	Don	Own	P	Pu	Au...SP	SG	9½	6¾	1270	DA	2¾	10½	5	7½	††3½	Ele	45
10.94	.....	.....	2.47	Own...320	2-4x4	101	1650	I	2	2⅛	G	TF	DR	Mar	Don	Own	P	TS	Au...SP	SG	9½	6¾	1246	DA	3½	10½	5	6½	††1¾	Ele	46
10.94	.....	.....	2.47	Own...320	2-4x4	101	1650	I	2	2⅛	G	TF	DR	Mar	Don	Own	P	TS	Au...SP	SG	9½	6¾	1246	DA	3½	10½	5	6½	††1¾	Ele	47
5.32	7.96	14.57	■	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	.....	Don	Novi	P	Pu	Roc...SP	SB	9	6	1358	DA	2¼	14	5	32	.....	Ele	48
5.32	7.96	14.57	■■	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au...DSP	SB	9	6	1358	DA	2¼	14	5	32	.....	Ele	49
5.32	7.96	14.57	■■	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Roc...SP	.....	9	6½	1358	Ad	2¼	17	5	32	.....	Ele	50
5.32	7.96	14.57	■■	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au...DSP	SB	9	6½	1358	Ad	2¼	17	5	32	.....	Ele	51
5.80	8.71	15.98	▲▲	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au...DSP	SB	9	6½	1358	Ad	2¼	17	5	32	.....	Ele	52
5.80	8.71	15.98	▲▲	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au...DSP	SB	9	6½	1358	SA	2¼	17	5	32	.....	Ele	53
5.80	8.71	15.98	▲▲	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au...DSP	SB	9	6½	1358	FO	2¼	17	5	32	.....	Ele	54
13.74	.....	.....	4.08	Own...EAE	4-3½x3⅜	134	2000	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	.....	.....	.....	DA	3¾	11	4	6½	8	Ele	55
13.74	.....	.....	4.08	Own...EAE	4-3½x3⅜	134	2000	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	.....	.....	.....	DA	3¾	11	4	6½	8	Ele	56
14.05	.....	.....	4.17	Own...EAE	4-3½x3⅜	134	2000	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	9	6½	1358	DA	3¾	11	4	6½	8	Ele	57
6.96	12.39	.....	4.07	Own...EAE	4-3½x3⅜	134	2000	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	9	6½	1279	DA	3¾	11	4	8½	8	Ele	58
6.96	12.39	.....	4.07	Own...EAE	4-3½x3⅜	134	2000	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...DP	IG	9	6½	1279	DA	3¾	11	4	8½	8	Ele	59
6.30	11.21	.....	3.68	Own...EAF	4-3⅝x3⅜	172	2200	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	.....	.....	.....	DA	3¾	11	4	8½	11½	Ele	60
6.72	11.96	.....	3.93	Own...EAF	4-3⅝x3⅜	172	2200	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	9	6½	1279	DA	3¾	14	4	8½	11½	Ele	61
6.72	11.96	.....	3.93	Own...EAF	4-3⅝x3⅜	172	2200	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...DP	IG	9	6½	1279	DA	3¾	14	4	8½	11½	Ele	62
13.06	.....	.....	3.87	Own...EAE	4-3½x3⅜	134	2000	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	9	6½	1358	SA	3¾	14	4	6½	9½	Ele	63
6.71	11.95	.....	3.93	Own...EAF	4-3⅝x3⅜	172	2200	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	9	6½	1279	SA	3¾	14	4	8½	9½	Ele	64
6.71	11.95	.....	3.93	Own...EAF	4-3⅝x3⅜	172	2200	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...DP	IG	9	6½	1279	SA	3¾	14	4	8½	9½	Ele	65
13.20	.....	.....	3.94	Own...EAE	4-3½x3⅜	134	2000	I	3	2½	G	K	Own	Mar	HH	Novi	P	Pu	Lo...SP	IG	9	6	1358	DA	3¾	11	5	5	9	Ele	66
5.10	6.40	9.20	2.80	Chr. Ind 30	6-3½x4⅝	230	1800	L	4	2½	G	.....	AL	Car	Uni	Pie	P	Pu	BB...SP	Hel	8¾	6½	1025	FK	5	18½	5	6	6	Ele	67
6.49	16.15	.....	3.22	Own...C264	4-4x5½	264	1450	I	3	.....	G	D,K	.....	Own	Don	Own	P	Pu	O-R...SP	SG	11	7½	899	CL	6¾	18	8	48	.....	Ele	68
6.49	16.15	.....	3.22	Own...D264	4-4x5½	264	1450	I	5	.....	O	.....	.....	Own	Don	Own	P	Pu	O-R...SP	SG	11	7½	899	CL	7½	18	9	48	.....	Ele	69
.....	.....	.....	2.60	Own...C60	4-2⅝x2¾	60	1800	L	3	.....	G	.....	.....	Own	Don	Own	P	TS	R-A...SP	SG	9	4½	1485	WG	2½	7½	3	2	††1¾	.....	70
6.86	16.74	.....	3.24	Own...C169	4-3½x4¼	169	2000	I	3	.....	G	.....	.....	Own	Don	Own	P	Pu	O-R...SP	SG	11	7¼	1082	CL	4½	11½	6	28	.....	Ele	71
5.50	15.80	.....	2.90	Own...D264	4-4½x5½	350	1500	.....	5	.....	O	.....	.....	Own	Don	Own	P	Pu	O-R...SP	.....	14	8¼	707	CL	9½	35	11	40	.....	Ele	72
5.95	11.94	.....	2.76	Own...H277	4-4x5½	277	1350	I	3	2⅛	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB...SP	SG	13½	6½	3050	WS	22	23	7	48	**	Ele	73
6.52	13.07	.....	3.02	Own...H277	4-4x5½	277	1350	I	3	2⅛	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB...SP	SG	13½	6½	3050	WS	22	23	7	48	**	Ele	74
6.52	13.07	.....	3.02	Own...H277	4-4x5½	277	1350	I	3	2⅛	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB...SP	SG	13½	6½	3050	WS	22	23	7	48	**	Ele	75
6.52	13.07	.....	3.02	Own...H277	4-4x5½	277	1350	I	3	2⅛	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB...SP	SG	13½	6½	3050	WS	22	23	7	48	**	Ele	76
5.95	11.94	.....	2.76	Own...E201	4-3⅝x4⅞	201	1500	I	3	2⅝	G	D,O	AL	Mar	Don	Own	P	Pu	BB...SP	SG	13½	6½	3146	WS	18	19	7	48	**	Ele	77
6.53	13.08	.....	3.03	Own...E201	4-3⅝x4⅞	201	1500	I	3	2⅝	G	D,O	AL	Mar	Don	Own	P	Pu	BB...SP	SG	13½	6½	3146	WS	18	19	7	48	**	Ele	78
.....	.....	.....	.....	Own...E201	4-3⅝x4⅞	201	1500	I	3	2⅝	G	D,O	AL	Mar	Don	Own	P	Pu	BB...SP	SG	13½	6½	3146	WS	18	19	7	48	**	Ele	79
.....	.....	.....	.....	Own...E201	4-3⅝x4⅞	201	1500	I	3	2⅝	G	D,O	AL	Mar	Don	Own	P	Pu	BB...SP	SG	13½	6½	3146	WS	18	19	7	48	**	Ele	80
12.07	.....	.....	2.54	Own...J382	4-4½x6	382	1350	I	3	3¼	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB...SP	SG	16	8½	3059	CL	26	27½	9	68	**	Ele	81
5.32	7.96	14.57	■	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Roc...SP	SB	9	6½	1358	Ad	2¼	17	5	32	.....	Ele	82
5.80	8.71	15.98	▲▲	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au...DSP	SB	9	6½	1358	Ad	2¼	17	5	32	.....	Ele	83
5.80	8.71	15.98	▲▲	Cont...Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au...DSP	SB	9	6½	1358	FO	2¼	17	5	32	.....	Ele	84

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• TRACTORS •

1957 MODELS OF TRACTORS . . .

Line Number	TRACTOR MAKE AND MODEL	GENERAL: Wheelbase (In.)	Minimum Turning Radius Outside (Ft.)	Ground Clearance (In.)	Shipping Weight with Rubber Tires (Lb.)	TREAD (In.): Minimum	TREAD (In.): Maximum	DRAWBAR: Lateral Adjustment (In.)	DRAWBAR: Height Above Ground (In.)	OVERALL DIMENSIONS: Length (In.)	OVERALL DIMENSIONS: Width (In.)	OVERALL DIMENSIONS: Height—To Highest Point (In.)	Standard Equipment	WHEELS: STEEL Diam. and Face: Front (In.)	WHEELS: STEEL Diam. and Face: Rear (In.)	WHEELS: TIRE SIZE: Front (In.)	WHEELS: TIRE SIZE: Rear (In.)	HP. RATING: Belt	HP. RATING: Drawbar	Nebraska Test Number	Power Take-off	Number of Forward Speeds	Number of Reverse Speeds	Travel Speeds at Normal Governed Engine R.P.M. (M.P.H.) with Standard Wheels: First	Second	Third
	Massey-Harris (Cont'd)																									
1	.....50 Tricycle	84	8	18½	3195	48	76	17	Ad	127	63½	63¼	RT			5.50/16	10/38	28.99	23.75	595	St	6	2	1.45	2.18	3.99
2	.....50 Utility	81	8	12½	3100	48	76	17	Ad	120	63½	57	RT			6.00/16	11/28	28.99	23.75	595	St	6	2	1.33	1.99	3.64
3	.....50 Standard	81	8	12½	3100	48	76	17	Ad	120	63½	57	RT			5.50/16	11/28	28.99	23.75	595	St	6	2	1.33	1.99	3.64
4	.....333 Std.	87½	9	15	4030	57¼	57¼	19¼	Ad	138½	72	81½	RT			6.50/16	12/38	37.00	30.40	NT	Op	5	1	1.43	2.16	2.87
5	.....333 RT	88¾	9	15	4202	56	88	19¼	Ad	140½	76	84½	RT			6.50/16	11/38	37.00	30.40	NT	Op	5	1	1.43	2.16	2.87
6	.....333 RS	88¾	9	15	4041	56	88	19¼	Ad	138½	76	83½	RT			9.00/10	11/38	37.00	30.40	NT	Op	5	1	1.43	2.16	2.87
7	.....333 HA	99½	9	15	4422	56	88	19¼	Ad	150½	76	84½	RT			6.50/16	11/38	37.00	30.40	NT	Op	5	1	1.43	2.16	2.87
8	.....444 Std.	87½	8½	17	5364	57¼	57¼	19¼	Ad	138½	72	82½	RT			7.50/16	13/30	42.90	34.60	NT	Op	5	1	1.43	2.16	2.87
9	.....444 RT	88¾	8½	17	5258	56	88	19¼	Ad	140½	76	85½	RT			6.50/16	12/38	42.90	34.60	NT	Op	5	1	1.43	2.16	2.87
10	.....444 RS	88¾	8½	17	5097	56	88	19¼	Ad	138½	76	84½	RT			9.00/10	12/38	42.90	34.60	NT	Op	5	1	1.43	2.16	2.87
11	.....444 HA	99½	8½	17	5478	56	88	19¼	Ad	150½	76	85½	RT			6.50/16	12/38	42.90	34.60	NT	Op	5	1	1.43	2.16	2.87
12	.....555 Std.	87½	17	12½	7631	57	57	30¼	15	146	72½	83¼	S-R	30x5½	54x12	7.50/18	14/34	57.97	45.30	NT	Op	4	1	2.96	4.22	5.22
13	.....555 Rice	90	17	12½	.....	70	70	30¼	16¾	.....	91	65¾	S-R	30x5½	54x12	7.50/18	18/26	57.97	45.30	NT	Op	4	1	2.96	4.22	5.22
14	.....555 West. Spl.	90	17	12½	.....	70	70	30¼	12½	.....	89½	64½	S-R	30x5½	54x12	7.50/18	18/26	57.97	45.30	NT	Op	4	1	2.96	4.22	5.22
15	M-H-F.....202 Ind.	75	8	13	2845	48	76			113	63½	55	RT			6.00/16	11/28	.....	.....	NT	St	6	2	1.23	1.84	3.37
16	.....202 Std. Ind.	75	8	13	2660	48	76	17	Ad	119	63½	55	RT			6.00/16	11/28	.....	.....	NT	St	6	2	1.23	1.84	3.37
	McCormick																									
17	.....Farmall Cub	69	.....	20½	1590	40	56	23	Ad	99	48°	76	RT	.....	.....	4.00/12	8/24	.....	.....	575	Op	3	1	2.40	3.29	7.30
18	.....Farmall 100	71	.....	22	2710	40	70	19	Ad	107	56°	82	RT	.....	.....	5.00/15	9/24	.....	.....	537	Op	4	1	2.30	3.70	4.80
19	.....Farmall 100-HC	71	.....	27	2960	44	68	19	Ad	115	60½°	88	RT	.....	.....	4.00/19	9/36	.....	.....	NT	Op	4	1	3.00	4.80	6.40
20	.....Farmall 200	82	.....	23°	3310	61½	100	.....	.....	123	80½°	95	RT	.....	.....	5.00/15	10/36	.....	.....	536	Op	4	1	2.40	3.90	5.10
21	.....Farmall 300	92	.....	19°	5500	6	105	26	Ad	136	75½°	96	Op	.....	.....	5.50/16	11/38	.....	.....	573	Op	5	1	2.50	3.82	5.15
22	.....Farmall 300-HC	94	.....	30	5500	60	84	30	Ad	149	86	95	RT	.....	.....	6.00/20	11/38	.....	.....	NT	Op	5	1	2.40	3.67	4.96
23	.....Farmall 400	96	.....	22½°	6220	61½	106	26	Ad	141	84½°	96	Op	.....	.....	6.00/16	12/38	.....	.....	571	Op	5	1	2.50	3.85	4.82
24	.....Farmall 400-D	96	.....	22½°	6840	61½	106	26	Ad	141	84½°	94	Op	.....	.....	6.00/16	12/38	.....	.....	534	Op	5	1	2.50	3.85	4.82
25	.....Farmall 400-HC	101	.....	34	6580	60	84	30	Ad	155	86°	107	RT	.....	.....	6.00/20	13/38	.....	.....	NT	Op	5	1	2.52	3.88	4.87
26	.....Farmall 400-DHC	101	.....	34	6990	60	84	30	Ad	155	86°	106	RT	.....	.....	6.00/20	13/38	.....	.....	NT	Op	5	1	2.52	3.88	4.87
	Minneapolis-Moline																									
27	.....335 Utility	79	10½	18	3070	48	78	19¼	Ad	113¼	58¼	58¼	RT	.....	.....	5.50/16	10/24	35.00	30.00	NT	Op	5	1	2.55	3.91	5.96
28	.....445 Utility	81½	.....	20	3450	56	84	22¼	Ad	120½	68	60½	RT	.....	.....	5.50/16	11/28	44.00	40.00	578	Op	5	1	2.61	3.99	6.00
29	.....445 Type U	86	.....	25½	3530	56	88	25¼	Ad	130	82½	67½	RT	.....	.....	5.50/16	11/38	44.00	40.00	578	Op	5	1	2.78	4.26	6.48
30	.....445 Type E	93	.....	22½	3830	56	88	25¼	Ad	137	82½	68¼	RT	.....	.....	5.50/16	11/38	44.00	40.00	578	Op	5	1	2.78	4.26	6.48
31	.....445 Type N	86	.....	25½	3850	56	88	25¼	Ad	128½	82½	67½	RT	.....	.....	7.50/10	11/38	44.00	40.00	578	Op	5	1	2.78	4.26	6.48
32	.....UBU Special	87½	8¼	25	5350	54½	84½	22	Ad	133	83½	79	RT	.....	.....	6.00/16	12/38	50.38	45.43	520	Op	5	1	2.60	3.60	4.20
33	.....UBE Special	96½	10½	20	5550	54½	84½	22	Ad	141	83½	79	RT	.....	.....	6.00/16	12/38	50.38	45.43	520	Op	5	1	2.60	3.60	4.20
34	.....UBN Special	87½	8¼	25	5250	54½	84½	22	Ad	133	83½	79	RT	.....	.....	9.00/10	12/38	50.38	45.38	520	Op	5	1	2.60	3.60	4.20
35	.....UBUD Special	87½	8¼	25	5450	54½	84½	22	Ad	133	83½	79	RT	.....	.....	6.00/16	12/38	45.00	40.00	NT	Op	5	1	2.60	3.60	4.20
36	.....UBED Special	96½	10½	20	5800	54½	84½	22	Ad	141	83½	79	RT	.....	.....	5.00/16	12/38	45.00	40.00	NT	Op	5	1	2.60	3.60	4.20
37	.....UBND Special	87½	8¼	25	5450	54½	84½	22	Ad	133	83½	79	RT	.....	.....	9.00/10	12/38	45.00	40.00	NT	Op	5	1	2.60	3.60	4.20
38	.....UTS Special	79½	12	12¼	5385	57	62½	22	Ad	126¼	71	71	RT	.....	.....	6.00/16	12/38	50.38	45.43	411	Op	5	1	2.60	3.60	4.20
39	.....UTSD Special	79½	12	12¼	5660	57	62½	22	Ad	126¼	71	71	RT	.....	.....	6.00/16	12/38	45.00	40.00	NT	Op	5	1	2.60	3.60	4.20
40	.....GB	82½	14	14¾	6525	66	96	25	16¼	137	83	72½	RT	.....	.....	7.50/18	15/34	70.00	61.00	547	Op	5	1	2.70	3.80	4.40
41	.....GBD	96	16½	14¾	7400	66	96	25	16¼	151¼	83	72½	RT	.....	.....	7.50/18	15/34	64.00	56.00	568	Op	5	1	2.70	3.80	4.40
42	.....UTI Industrial	79½	16	17¼	6010	66¼	70½	15	16¼	127	84½	74¾	RT	.....	.....	8.25/20	15/26	50.38	45.43	NT	Op	5	1	2.40	3.50	4.00
43	.....UTID Industrial	79½	16	17¼	6310	66½	70½	15	16¼	127	84½	74¾	RT	.....	.....	8.25/20	15/26	45.00	40.00	NT	Op	5	1	2.40	3.50	4.00
44	.....UTIL Industrial	88	17	17¼	6310	66½	70½	15	16¼	136	84½	74¾	RT	.....	.....	8.25/20	15/26	50.38	45.43	NT	Op	6	**	2.40	3.50	4.00
45	.....UTILD Industrial	88	17	17¼	6610	66½	70½	15	16¼	136	84½	74¾	RT	.....	.....	8.25/20	15/26	45.00	40.00	NT	Op	6	**	2.40	3.50	4.00
46	Oliver...Super 55 HC	73½	10	14½	3050	48	76	20	Ad	120	66¾	53	RT	.....	.....	5.50/16	10/28	35.88	30.75	524	Op	6	2	1.48	1.97	3.05
47	.....Super 55 D	73½	10	14½	3200	48	76	20	Ad	120	66¾	53	RT	.....	.....	5.50/16	10/28	34.09	28.97	526	Op	6	2	1.48	1.97	3.05
48	.RC Super 66 HC	86	8¼	18½	2886	60	88	20½	Ad	134	80½	73¼	RT	.....	.....	5.50/15	9/38	35.54	29.60	541	Op	6	2	1.88	2.72	3.25
49	.RC Super 66 D	86	8¾	18½	3026	60	88	20½	Ad	134	80½	73¼	RT	.....	.....	5.50/15	9/38	35.43	29.09	544	Op	6	2	1.88	2.72	3.25
50	.RC Super 77 HC	90	9¼	18½	4226	60	92½	20¾	Ad	139¼	80½	73°	RT	.....	.....	5.50/16	11/38	46.18	40.16	542	Op	6	2	2.48	3.24	4.29
51	.Std. Super 77 HC	90	12½	18½	4175	60	92½	20¾	Ad	139¼	80½	75	RT	.....	.....	7.50/16	11/38	46.18	40.16	542	Op	6	2	2.48	3.24	4.29
52	.Ind. Super 77 HC	81	12½	13½	.....	52½	69½	20¾	Ad	133½	70½	70°	RT	.....	.....	7.00/20	12.00/24	.....	.....	NT	Op	6	2	2.03	2.67	3.54
53	.RC Super 77 D	90	9¼	18½	4346	60	92½	20¾	Ad	139¼	80½	75	RT	.....	.....	5.50/16	11/38	45.94	40.04	543	Op	6	2	2.46	3.24	4.29
54	.Std. Super 77 D	90	12½	18½	4367	60	92½	20¾	Ad	139¼	80½	75	RT	.....	.....	7.50/16	11/38	45.94	40.04	543	Op	6	2	2.46	3.24	4.29
55	.Ind. Super 77 D	81	12½	13½	.....	52½	69½	20¾	Ad	133½	78½	70°	RT	.....	.....	7.00/20	12.00/24	.....	.....	NT	Op	6	2	2.03	2.67	3.54
56	.RC Super 88 HC	93	9¾	18½	4820	60	92½	20¾	Ad	143¼	80½	75°	RT	.....	.....	6.00/16	12/38	58.08	49.81	525	Op	6	2	2.50	3.24	4.31
57	.Std. Super 88 HC	93	12½	18½	5040	60	92½	20¾	Ad	143¼	80½	75	RT	.....	.....	7.50/16	12/38	58.08	49.81	525	Op	6	2	2.50	3.24	4.31
58	.Ind. Super 88 HC	82	12½	12½	.....	54	71	20½	Ad	135	81½	70¾	RT	.....	.....	7.00/20	13.00/24	.....	.....	NT	Op	6	2	2.01	2.63	3.46
59	.RC Super 88 D	93	9¾	18½	5020	60	92½	20¾	Ad	143¼	80½	75°	RT	.....	.....	6.00/16	12/38	55.63	49.56	527	Op	6	2	2.50	3.24	4.31
60	.Std. Super 88 D	93	12½	18½	5372	60	92½	20½	Ad	143¼	80½	75	RT	.....	.....	7.50/16	12/38	56.08	49.56	527	Op	6	2	2.50	3.24	4.31
61	.Ind. Super 88 D	82	12½	11½	.....	54	71	20½	Ad	135	81½	70¾	RT	.....	.....	7.00/20	13.00/24	.....	.....	NT	Op	6	2	2.01	2.63	3.46
62	.....Super 99 HC	90	10½	12	6600	62	.....	20	Ad	136	76	80	RT	.....	.....	7.50/18	14/34	.....	.....	NT	Op	6	2	2.39	3.14	4.24
63	.....Super 99 D	90	10½	12	6800	62	.....	20	Ad	136	76	90	RT	.....	.....	7.50/18	14/34	65.01	60.90	557	Op	6	2	2.39	3.14	4.24
64	.....Super 99 GM	90	10½	12	7600	62	62	37½	Ad	136	85	71¾	RT	.....	.....	7.50/18	15/34	83.46	77.44	556	Op	6	2	2.63	3.45	4.66
65	Sheppard.....SD-2	85	7½	25	4608	56	84	23	.....	125	Ad	70½	RT	.....	.....	6.00/16	11/38	.....	.....	NT	Op	8	2	1.85	2.67	3.14
66	.....SD-3	92	8	25	4708	56	84	23	.....	131	Ad	70½	RT	.....	.....	6.00/16	12/38	.....	.....	NT	Op	8	2	1.85	2.67	3.14
67	.....SD-4	91½	8¾	26	6000	56	84	22½	18¼	136¼	Ad	83½	RT	.....	.....	6.00/16	13/38	.....	.....	NT	Op	10	2	1.89	2.60	2.81
68	Tiger.....PTD 5	48	8	13	518	26	40	N	13	64	26	35	RT	8	12	4.00/8	5.00/12	5.10	4.50	.....	St	1	1	6.00	.....	.....
69	883	48	9	15	590	26	40	N	15	66	26	37	RT	8	16	4.00/8	6.00/16	5.10	6.80	.....	St	1	1	6.00	.....	.....
70	.....C-100	45	8	19	900	26	41	8	15	75	57	45	RT	12	18	3.50/12	8/18	8.90	10.00	.....	.....	3	1	2.00	6.00	10.0

ABBREVIATIONS

*—With hub extension; 80" without.
‡—Clearance at front axle.
††—Capacity final drive, each case.
†—Minimum.
•—Rated using gasoline.
^—At top of hood.
**—Included in transmission.
***—With reversing transmission and 6 reverse speeds, from a low reverse of 1.90 and 3 other reverse speeds from 2.30 to 13.00 mph.
•—To top of steering wheel.
"—6.37 in 6th, 7.33 in 7th, road speed in 8th.
""—5.20 in 6th, 6.10 in 7th, 10.50 in 8th, 1.98 in low reverse, 2.28 in high reverse.
‡‡—74½ in. to 98 in.
""—5.24 in 6th, 6.15 in 7th, road speed in 8th, 1.98 in low reverse, 3.28 in high reverse.
^—Includes filter.
^^—Low reverse, 1.93; high reverse, 7.75.
^^—5.60 in 6th; 9.00 in 7th; 13.00 in 8th; 1.70 in low reverse; 5.90 in high reverse.
††—6.70 in 7th; 9.10 in 7th; 13.20 in 8th; 1.70 in low reverse; 5.90 in high reverse.
■■—1.77 in low reverse; 7.09 in high reverse.
♦—Engine clutch only; transmission clutch, multiple disc operating wet.
*—84½ with dual front wheels.
‡—Five speed optional.
‡‡—Double plate with continuous running power take-off.
(a)—Low reverse, 1.64; high reverse, 6.55.
(b)—Roller bearing.
(c)—Front and center, 2¾; rear, 3.
(d)—Low reverse, 2.31; high reverse, 3.91.
(e)—Reverse 2.12 and 2nd speed 5.00.
(f)—1.54 and 3.18.
(g)—13¾ minimum; 24½ maximum.
(h)—2.15 and 3.70.
(i)—2.59 and 4.52.
(j)—2.14 and 3.72.
(k)—2.56 and 4.40.
(l)—4.29 in 6th, 4.90 in 7th, 6.40 in 8th, 9.91 in 9th, 16.00 in 10th, 1.62 in low reverse and 2.15 in high reverse.
(m)—2.06 and 3.54.
(n)—2.88 and 5.11.
(q)—16, 22, 25½, 32½.
(r)—12 and 15.
(s)—14½ and 17.
(t)—14½ and 16½.
(v)—Low reverse, 3.26; high reverse, 6.22.

A—Air. AC—A.C. Spark Plug Co.
Ad—Adjustable.
AL—Electric Auto-Lite Co.
Au—Auburn Clutch Co.
BB—Borg & Beck Div.
Bos—American Bosch Corp.
Br—Briggs & Stratton Corp.
B-R—Borg and Beck or Rockford.

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. . . WHEEL TYPE—concluded

Travel Speeds at Normal Governed Engine R.P.M. with Standard Wheels				ENGINE							FUEL									BELT PULLEY				CAPACITIES							
Fourth	Fifth	Sixth	Reverse	Make and Model	Number of Cylinders—Bore and Stroke (In.)	Piston Disp. (Cu. In.)	R.P.M. at Governed Speed	Valve Arrangement	Number of Main Bearings	Diameter of Main Bearings	Standard	Optional	Ignition—Make	Carburetor or Injector Pump—Make	Air Cleaner—Make	Governor—Make	Oiling System—Make	Cooling System—Type	Clutch—Make and Type	Final Drive—Type	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts.)	Starting Method	Line Number
5.80	6.71	15.96	▲▲	Cont. Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au. DSP	SB	9	6½	1358	SA	2¼	17	5	32	.....	Ele	1
5.32	7.96	14.57	■■	Cont. Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Roc. SP	SB	9	6½	1358	SA	2¼	17	5	32	.....	Ele	2
5.32	7.96	14.57	■	Cont. Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	.....	Don	Novi	P	Pu	Au. DSP	.....	9	6½	1358	Ad	2¼	17	5	32	.....	Ele	3
3.73	7.97	.....	1.88	Own. E201	4-3⅛x4½	201	1500	I	3	2⅝	G	k,d,o,lp	AL	Mar	Don	Own	P	Pu	BB. SP	SG	13½	6½	876	WG	4½	23	7	56	.....	Ele	4
3.73	7.97	.....	1.88	Own. E201	4-3⅛x4½	201	1500	I	3	2⅝	G	k,d,o,lp	AL	Mar	Don	Own	P	Pu	BB. SP	SG	13½	6½	876	WG	4½	23	7	56	.....	Ele	5
3.73	7.97	.....	1.88	Own. E201	4-3⅛x4½	201	1500	I	3	2⅝	G	k,d,o,lp	AL	Mar	Don	Own	P	Pu	BB. SP	SG	13½	6½	876	WG	4½	23	7	56	.....	Ele	6
3.73	7.97	.....	1.88	Own. E201	4-3⅛x4½	201	1500	I	3	2⅝	G	k,d,o,lp	AL	Mar	Don	Own	P	Pu	BB. SP	SG	13½	6½	876	WG	4½	23	7	56	.....	Ele	7
3.73	7.97	.....	1.88	Own. H277	4-4x5½	277	1500	I	3	2⅞	G	k,d,o,lp	AL	Zen	Don	Own	P	Pu	BB. SP	SG	13½	6½	876	WG	5½	23	7	56	.....	Ele	8
3.73	7.97	.....	1.88	Own. H277	4-4x5½	277	1500	I	3	2⅞	G	k,d,o,lp	AL	Zen	Don	Own	P	Pu	BB. SP	SG	13½	6½	876	WG	5½	23	7	56	.....	Ele	9
3.73	7.97	.....	1.88	Own. H277	4-4x5½	277	1500	I	3	2⅞	G	k,d,o,lp	AL	Zen	Don	Own	P	Pu	BB. SP	SG	13½	6½	876	WG	5½	23	7	56	.....	Ele	10
3.73	7.97	.....	1.88	Own. H277	4-4x5½	277	1500	I	3	2⅞	G	k,d,o,lp	AL	Zen	Don	Own	P	Pu	BB. SP	SG	13½	6½	876	WG	5½	23	7	56	.....	Ele	11
12.07	.....	.....	2.54	Own. J382	4-4½x6	382	1500	I	3	3¼	G	k,d,o,lp	AL	Zen	Don	Own	P	Pu	BB. SP	SG	16	8½	771	CL	7	27½	9	68	.....	Ele	12
12.07	.....	.....	2.54	Own. J382	4-4½x6	382	1500	I	3	3¼	G	k,d,o,lp	AL	Zen	Don	Own	P	Pu	B-R. SP	SG	16	8½	771	CL	7	27½	9	68	.....	Ele	13
12.07	.....	.....	2.54	Own. J382	4-4½x6	382	1500	I	3	3¼	G	k,d,o,lp	AL	Zen	Don	Own	P	Pu	Roc. SP	SG	16	8½	771	CL	7	27½	9	68	.....	Ele	14
4.90	7.36	13.46	(a)	Cont. Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Roc. SP	SB	9	6½	1358	SA	2¼	14	5	32	.....	Ele	15
4.90	7.36	13.46	(a)	Cont. Z134	4-3½x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Roc. SP	SB	9	6½	1358	SA	2¼	14	5	32	.....	Ele	16
.....	.....	.....	2.70	Own. C60	4-2⅝x2¾	60	1800	L	3	.....	G	N	.....	Own	Don	Own	.....	TS	R-A. SP	SG	7½	4¾	1485	WG	2½	7½	3	2	††	⅛	17
10.00	.....	.....	2.90	Own. C123	4-3½x4	123	1400	I	3	.....	G	D,K	.....	CMZ	Don	Own	.....	Pu	R-A. SP	SG	8½	6	1157	WG	3¾	11	5	5	††	1½	Ele 18
13.20	.....	.....	3.80	Own. C123	4-3½x4	123	1400	I	3	.....	G	D,K	.....	CMZ	Don	Own	.....	Pu	R-A. SP	SG	8½	6	1157	WG	3¾	11	5	5	††	1½	Ele 19
10.70	.....	.....	3.10	Own. C123	4-3½x4	123	1650	I	3	.....	G	D,K	.....	CMZ	Don	Own	.....	Pu	R-A. SP	SG	8½	6	1363	WG	3¾	11	5	20	**		Ele 20
6.60	16.11	.....	3.12	Own. C169	4-3⅞x4½	169	1750	I	3	.....	G	D,K	.....	Own	Don	Own	.....	Pu	Roc. SP	SG	8¾	7½	1061	WG	4¼	17	6	28	**		Ele 21
6.35	15.48	.....	3.00	Own. C169	4-3⅞x4½	169	1750	I	3	.....	G	D,K	.....	Own	Don	Own	.....	Pu	Roc. SP	SG	8¾	7½	1061	WG	4¼	17	6	28	††	3	Ele 22
6.71	16.70	.....	3.33	Own. C264	4-4x5½	264	1450	I	3	.....	G	D,K	.....	Own	Don	Own	.....	Pu	O-R. SP	SG	11	7½	899	WG	6½	18	8	48	**		Ele 23
6.71	16.70	.....	3.33	Own. D264	4-4x5½	264	1450	I	5	.....	G	N	.....	Own	Don	Own	.....	Pu	O-R. SP	SG	11	7½	899	WG	7¼	18	9	48	**		Ele 24
6.77	16.84	.....	3.38	Own. C264	4-4x5½	264	1450	I	3	.....	G	D,K	.....	Own	Don	Own	.....	Pu	O-R. SP	CH	11	7½	899	WG	6½	18	8	48	**		Ele 25
6.77	16.84	.....	3.38	Own. D264	4-4x5½	264	1450	I	5	.....	O	N	.....	Own	Don	Own	.....	Pu	O-R. SP	CH	11	7½	899	WG	7¼	18	9	48	††	3	Ele 26
9.23	14.15	.....	3.91	Own. 165A	4-3½x4	165	1500	I	3	(c)	G	.....	DR	Mar	Don	Novi	P	Pu	Roc. SP	SG	8¼	6½	1420	FK	2¾	14	7	24	**		Ele 27
9.42	14.44	.....	3.99	Own. 206H	4-3⅝x5	206	1550	I	3	(c)	G	LP,TF	DR	Mar	Don	Novi	P	Pu	Roc. SP	SG	8¾	6½	1470	FK	3⅜	14	7	32	**		Ele 28
10.05	15.40	.....	4.26	Own. 206H	4-3⅝x5	206	1550	I	3	(c)	G	LP,TF	DR	Mar	Don	Novi	P	Pu	Roc. SP	SG	8¾	6½	1470	SA	3⅜	17	7	32	**		Ele 29
10.05	15.40	.....	4.26	Own. 206H	4-3⅝x5	206	1550	I	3	(c)	G	LP,TF	DR	Mar	Don	Novi	P	Pu	Roc. SP	SG	8¾	6½	1470	FK	3⅜	17	7	32	**		Ele 30
10.05	15.40	.....	4.26	Own. 206H	4-3⅝x5	206	1550	I	3	(c)	G	LP,TF	DR	Mar	Don	Novi	P	Pu	Roc. SP	SG	8¾	6½	1470	FO	3⅜	17	7	32	**		Ele 31
6.10	14.10	.....	2.00	Own. 283C	4-4¼x5	283	1300	I	3	2⅜	G	LP,TF	DR	Mar	Uni	Own	P	Pu	Roc. SP	SG	16	7	741	SA	6	21	10	52	**		Ele 32
6.10	14.10	.....	2.00	Own. 283C	4-4¼x5	283	1300	I	3	2⅜	G	LP,TF	DR	Mar	Uni	Own	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	10	52	**		Ele 33
6.10	14.10	.....	2.00	Own. 283C	4-4¼x5	283	1300	I	3	2⅜	G	LP,TF	DR	Mar	Uni	Own	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	10	52	**		Ele 34
6.10	14.10	.....	2.00	Own. D283	4-4¼x5	283	1300	I	3	2⅜	O	.....	.....	Bos	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	SA	6	21	10	52	**		Ele 35
6.10	14.10	.....	2.00	Own. D283	4-4¼x5	283	1300	I	3	2⅜	O	.....	.....	Bos	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	10	52	**		Ele 36
6.10	14.10	.....	2.00	Own. D283	4-4¼x5	283	1300	I	3	2⅜	O	.....	.....	Bos	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	10	52	**		Ele 37
6.10	14.10	.....	2.00	Own. 283C	4-4¼x5	283	1300	I	3	2⅜	G	LP,TF	DR	Mar	Uni	Own	P	Pu	TD. SP	SG	16	7	741	FK	6	21	10	52	**		Ele 38
6.10	14.10	.....	2.00	Own. D283	4-4¼x5	283	1300	I	3	2⅜	O	.....	.....	Bos	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	10	52	**		Ele 39
6.30	14.70	.....	2.10	Own. 403C	4-4⅝x6	403	1300	I	3	2⅜	G	LP,TF	DR	Mar	Don	Own	P	Pu	TD. DP	SG	16	7	741	FK	12	29	9	52	**		Ele 40
6.30	14.70	.....	2.10	Own. D425	4-4¼x5	425	1300	I	4	2⅜	O	.....	.....	Bos	Don	Bos	P	Pu	TD. DP	SG	16	7	741	FK	12	29	14	52	**		Ele 41
5.80	13.50	.....	1.90	Own. 283B	4-4¼x5	283	1300	I	3	2⅜	G	.....	DR	Mar	Uni	Own	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	9	52	**		Ele 42
5.80	13.50	.....	1.90	Own. D283	4-4¼x5	283	1300	I	3	2⅜	O	.....	.....	Bos	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	15	52	**		Ele 43
5.80	13.50	1.80	1.90	Own. 283B	4-4¼x5	283	1300	I	3	2⅜	G	.....	DR	Mar	Uni	Own	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	9	54	**		Ele 44
5.80	13.50	1.80	1.90	Own. D283	4-4¼x5	283	1300	I	3	2⅜	O	.....	.....	Bos	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	15	54	**		Ele 45
4.06	5.56	11.49	(f)	Own. 55HC	4-3½x3¾	144	1600	I	3	2¼	G	.....	DR	M-C	Don	Own	PS	Pu	Au. SP	SG	9	6½	1319	FK	3½	13	4	20	**		Ele 46
4.06	5.56	11.49	(f)	Own. 55D	4-3½x3¾	144	1600	I	3	2¼	O	.....	.....	Bos	Don	Bos	PS	Pu	Au. SP	SG	9	6½	1319	FK	3½	13	4	20	**		Ele 47
4.69	5.54	9.54	(h)	Own. 66HC	4-3½x3¾	144	1600	I	3	2¼	G	.....	DR	M-C	Don	Own	PS	Pu	BB. SP	SG	9½	7¼	1232	SA	3½	12⅝	4	18	**		Ele 48
4.69	5.54	9.54	(h)	Own. 66D	4-3½x3¾	144	1600	I	3	2¼	O	.....	.....	Bos	Don	Bos	PS	Pu	BB. SP	SG	9½	7¼	1232	SA	3½	12⅝	4	18	**		Ele 49
5.65	6.62	11.53	(i)	Own. 77HC	6-3½x3¾	216	1600	I	4	2⅜	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB. SP	SG	11½	7¼	992	SA	4½	16¾	5	18	**		Ele 50
5.65	6.62	11.53	(i)	Own. 77HC	6-3½x3¾	216	1600	I	4	2⅜	G	.....	DR	Mar	Don	Own	PS	Pu	BB. SP	SG	11½	7¼	992	FK	4½	16¾	5	18	**		Ele 51
4.65	9.34	16.27	(i)	Own. 77HC	6-3½x3¾	216	1600	I	4	2⅜	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB. SP	SG	11½	7¼	992	FK	4½	16¾	5	18	**		Ele 52
5.65	6.62	11.53	(i)	Own. 77D	6-3½x3¾	216	1600	I	4	2⅜	O	.....	.....	Bos	Don	Bos	PS	Pu	BB. SP	SG	11½	7¼	992	SA	4½	17	5	18	**		Ele 53
5.65	6.62	11.53	(i)	Own. 77D	6-3½x3¾	216	1600	I	4	2⅜	O	.....	DR	Bos	Don	Bos	PS	Pu	BB. SP	SG	11½	7¼	992	FK	4½	17	5	18	**		Ele 54
4.65	9.34	16.27	(i)	Own. 77D	6-3½x3¾	216	1600	I	4	2⅜	O	.....	.....	Bos	Don	Bos	PS	Pu	BB. SP	SG	11½	7¼	992	FK	4½	17	5	18	**		Ele 55
5.58	6.87	11.80	(k)	Own. 88HC	6-3⅝x4	265	1600	I	4	2⅝	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB. SP	SG	11½	7¼	992	SA	4½	20½	6	18	**		Ele 56
5.58	6.87	11.80	(k)	Own. 88HC	6-3⅝x4	265	1600	I	4	2⅝	G	.....	DR	Mar	Don	Own	PS	Pu	BB. SP	SG	11½	7¼	992	FK	4½	20½	6	18	**		Ele 57
4.48	9.34	16.05	(m)	Own. 88HC	6-3⅝x4	265	1600	I	4	2⅝	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB. SP	SG	11½	7¼	992	FK	4½	20½	6	18	**		Ele 58
5.58	6.87	11.80	(k)	Own. 88D	6-3⅝x4	265	1600	I	4	2⅝	O	.....	.....	Bos	Don	Bos	PS	Pu	BB. SP	SG	11½	7¼	992	SA	4½	18¼	6	18	**		Ele 59
5.58	6.87	11.80	(k)	Own. 88D	6-3⅝x4	265	1600	I	4	2⅝	O	.....	DR	Bos	Don	Bos	PS	Pu	BB. SP	SG	11½	7¼	992	FK	4½	18¼	6	18	**		Ele 60
4.48	9.34	16.05	(k)	Own. 88D	6-3⅝x4	265	1600	I	4	2⅝	O	.....	.....	Bos	Don	Bos	PS	Pu	BB. SP	SG	11½	7¼	992	FK	4½	18¼	6	18	**		Ele 61
5.58	7.01	12.45	(k)	Own. 99HC	6-4x4	302	1675	I	4	2⅝	G	.....	DR	Mar	Don	Own	P	Pu	BB. SP	SG	12	9	1000	FK	5½	30	6	32	.....		Ele 62
5.58	7.01	12.45	(m)	Own. 99D	6-4x4	302	1675	I	4	2⅝	O	.....	.....	Bos	Don	Bos	P	Pu	BB. SP	SG	12	9	1000	FK	5½	30	6	32	.....		Ele 63
6.13	7.70	13.66	(n)	GM. 3-71	3-4¼x5	213	1675	I	4	2⅝	O	.....	.....	Don	GM	P	Pu	BB. SP	SG	12	9	1000	FK	5½	30	13	32	**		Ele 64
3.72	4.53	*	(d)	Own. 13E	2-4¼x5	142	1650	I	3	2⅝	O	.....	Own	.....	Don	Own	P	Pu	Roc. SP	SG	8¼	7½	1350	.....	7	15	12	25	**		Ele 65
3.72	4.53	*	(d)	Own. 6E	3-4¼x5	212	1650	I	4	2⅝	O	.....	Own	.....	Don	Own	P	Pu	Roc. SP	SG	8¼	7½	1350	.....	7½	15	13	25	**		Ele 66
3.28	3.88	(1)	(1)	Own. 16	4-4½x5	319	1650	I	5	3 1/16	O	.....	Own	.....	Don	Own	P	Pu	Roc. SP	SG	10	7½	1150	.....	7½	22	16	32	**		Ele 67
.....	.....	.....	6.00	Br. 14	1-2⅝x2¾	14	3200	L	.....	.....	G	.....	Br	Br	Uni	Br	PS	A	TD. MD	SGC	.....	.....	.....	SA	.....	1	½	1	1	HC	68
.....	.....	.....	5.00	Br. 23	1-3x3	19	3300	L	.....	.....	G	.....	Br	Br	Uni	Br	PS	A	TD. MD	SGC	.....	.....	.....	SA	.....	2	1½	½	1	HC	69
.....	.....	.....	3.00	Br. 23	1-3x3	19	3300	L	.....	.....	G	.....	Br	Br	Uni	Br	PS	A	.....	SG	7	4	1300	.....	.....	2	3	3	3	HC	70

B-S—Bosch or Scintilla. **Bu**—Buda.
Car—Carter Carburetor Corp.
CH—Chain. **Chr**—Chrysler Corp.
CL—Cam and Lever.
CMZ—Carter, Marvel-Schebler or Zenith.
Cont—Continental Motors Corp.
D—Distillate. **DA**—Divided axle.
DF—Divided axle or front axle knuckle.
DFS—Divided axle, front axle knuckle or solid axle.
Don—Donaldson Co.
DP—Double plate, dry.
DR—Delco-Remy Div.
DSP—Dual single plate, dry.
Ele—Electric starting.
Ens—Ensign.
FK—Front axle knuckle.
FM—Fairbanks Morse & Co.
FO—Fork type.
G—Gasoline.
GM—General Motors Corp.
GS—Gasoline starting engine.
Han—Handy Governor Corp.
HC—Hand crank.
Hel—Helical gear.
HH—Houdaille-Hershey.
I—In head (Valves).
IG—Internal gear.
K—Kerosene.
L—"L" head (Valves).
Lo—Long Mfg. Co.
LP—Liquid petroleum gas.
Mar—Marvel-Schebler Carburetor Div.
M-C—Marvel-Schebler or Carter.
MD—Multiple disc, operating dry.
MS-Z—Marvel-Schebler or Zenith.
N—No or none.
NA—Not available.
Novi—Novi Equipment Co.
NS—Non-circulating splash.
NT—Not tested.
O—Diesel fuel.
Op—Optional.
O-R—Own or Rockford.
P—Pressure.
Per—Perkins.
Pie—Pierce Governor Co.
PS—Pressure and splash.
Pu—Pump.
R-A—Rockford or Auburn.
Roc—Rockford Clutch Div.
RT—Rubber tires.
SA—Solid axle.
SB—Spiral bevel gear.
SF—Solid axle or front axle knuckle.
SG—Spur gear.
SGC—Spur gear and chain.
SP—Single plate, dry.
Spi—Spicer.
S-R—Steel wheels or rubber tires.
St—Standard.
TD—Twin Disc Clutch Co.
TF—Tractor fuel.
TS—Thermo-syphon.
Uni—United Air Cleaner Div.
Var—Various.
Wico—Wico Electric Co.
WG—Worm gear.
Wis—Wisconsin Motor Corp.
WS—Worm and sector.
Zen—Zenith Carburetor Div

For Directory of the Tractor Manufacturers listed above, see Table of Contents

reverse.

*—84¾ with dual front wheels.

9.91 in 9th, 10.00 in 10th, 1.62 in

B-R—Borg and Beck or Rockford.

For Directory of the Tractor Manufacturers listed above, see Table of Contents

TRACTORS \ 1957

TRACK-LAYING TYPES

Line Number	Tractor Make and Model	Minimum Turning Radius Outside (Ft.) (Minimum Tread)	Ground Clearance (In.)	Shipping Weight (Lb.) Standard Shoe (Minimum Tread)	Tread: Minimum (In.)	Tread: Maximum (In.)	Drawbar: Lateral Adjustment—At Pin (In.)	Drawbar: Height Above Ground (In.)	Overall Dimensions: Length (In.)	Overall Dimensions: Width—Maximum (In.) (Minimum Tread)	Overall Dimensions: Height to Highest Point (In.)	Track: Width of Shoe—Standard (In.)	Track: Length on Ground (In.)	HP Rating: Belt	HP Rating: Drawbar	Power Take-off	No. of Forward Speeds	No. of Reverse Speeds	Maximum Drawbar Pull at Normal Governed Engine R.P.M.: First Gear (Lb.)	Second Gear (Lb.)	Third Gear (Lb.)	Fourth Gear (Lb.)	Fifth Gear (Lb.)	Sixth Gear (Lb.)	Travel Speeds at Normal Governed Engine R.P.M.: First Gear (M.P.H.)	Second Gear (M.P.H.)	Third Gear (M.P.H.)	Fourth Gear (M.P.H.)
1	Allis-Chalmers.. HD-6	7½	11¼	12800	44	60	21	13½	127⅞	78	68⅝	13	68⅞	63.00	52.00	Op	5	1	12640	7930	5550	4450	2975	....	1.50	2.40	3.30	4.00
2	.....HD-11	8¾	13⅞	20500	74	74	26½	16½	154	95⅞	84+	16	85¾	94.00	77.00	Op	6	3	20470	13410	9070	6900	5540	3900	1.40	2.10	2.90	3.80
3	.....HD-16AC	9½	14⅝	31600	74	74	35	17½	178⅛	96	89½+	20	96⅛	150.00	....	Op	3	2	60000	47000	26000	....	....	....	2.50	4.30	7.30	....
4	.....HD-21AC	10½	16½	44000	84	84	44	19⅞	194¾	109¼	98½+	24	106½	204.00	....	Op	2	1	65000	35000	....	....	....	....	3.00	7.50	....	....
5	Caterpillar..... D-2	.....	9	7175	40	50	20	12½	107½	55¾	61½	12	60½	43.00	38.00	Op	5	1	7250	5200	4220	3430	2230	....	1.80	2.70	3.20	3.90
6	..... D-4	.....	11½	10375	44	60	19½	14⅝	120½	62	69½	13	61½	57.00	50.00	Op	5	1	9550	6930	5350	4110	2600	....	1.90	2.70	3.40	4.20
7	..... D-6	.....	12½	17195	60	74	27¼	14	147⅛	79½	75⅝	16	85¾	85.00	75.00	Op	5	4	17000	10900	7550	5150	3600	....	1.70	2.60	3.60	5.00
8	..... D-7	.....	15½	25970	74	74	35	17¼	167⅛	97	81½	20	94⅝	128.00	102.00	Op	5	4	25900	17720	11960	7550	5280	....	1.50	2.20	3.20	4.60
9	..... D-8	.....	12¼	40430	78	78	....	18½	195½	102⅞	91⅞	22	111½	191.00	155.00	Op	5	3	39150	30900	21000	14120	9490	....	1.50	2.00	2.80	3.90
10	..... D-9	.....	20½	58725	90	90	....	21½	214¾	119¼	105	27	129¾	320.00	260.00	Op	6	6	54200	44600	30900	22400	16900	10800	1.70	2.20	3.00	3.90
11	Deere, John 420-C	(a)	12	(b)	38	48	18	12½	102	56	69	10	(c)	.....	.....	Op	(d)	1	.....	.....	.....	.....	.....	.....	.82	2.21	2.95	5.31
12	Euclid..... TC-12	7½	21¼	62500	110	110	N	24	195¼	137	98½	27	131	.....	.....	.....	3	3	10500	67000	54000	.....	.....	.....	2.00	3.50	7.80	....
13	I.H.C. T-6	6½	8¾	7800	40	50	19¾	12¼	104	63	68½	12	58½	50.64	41.52	Op	5	1	8714	6618	4348	3493	2337	....	1.60	2.30	3.30	4.00
14	..... TD-6	6½	8¾	8470	40	50	19¾	12¼	104	63	68½	12	58½	51.49	42.36	Op	5	1	8769	6635	4467	3580	2403	....	1.60	2.30	3.30	4.00
15	..... TD-9	7½	10½	11320	44	60	19½	13½	114	75½	73⅛	13	63⅞	64.46	55.77	Op	5	1	11720	8404	5721	4276	2864	....	1.70	2.50	3.40	4.30
16	..... TD-14	8½	11¾	20450	56	74	27½	13½	140⅝	91½	78½	16	78⅞	89.50	78.50	Op	6	2	17100	13400	10300	7980	5850	4050	1.60	2.10	2.70	3.50
17	..... TD-18	9½	14	28250	74	74	31¼	15⅝	166¼	94	84⅝	20	94⅝	128.31	105.88	Op	6	2	25143	18318	14544	11142	7952	6114	1.60	2.10	2.60	3.40
18	..... TD-24	9⅝	13½	40070	....	80	39¼	17¼	182¼	102	94⅝	22	104½	.....	161.07	Op	8	8	37160	29490	23415	18180	13125	++	1.60	2.10	2.50	3.20
19	..... TD-24TC	9⅝	13½	40375	....	80	39¼	17¼	182¼	102	94⅝	22	104½	.....	.....	.....	4	4	.....	.....	.....	.....	.....	.....	2.70	3.50	6.10	7.60
20	Oliver OC-3	6½	20	3182	31	68	25	14⅝	100	52⅛	50⅝	6	50	26.36	21.85	Op	3	1	3940	2512	1472	.....	.....	.....	2.01	3.19	5.24	....
21	..... AD-6	7½	13½	7096	42	80	21	14⅝	103½	58	54+	12	62	38.80	30.60	Op	3	1	6020	4160	2640	.....	.....	.....	1.78	2.62	3.74	....
22	..... AD	7½	13½	7682	42	80	21	14⅝	101½	58	54+	12	62	38.00	30.50	Op	3	1	6500	4520	2600	.....	.....	.....	1.78	2.62	3.74	....
23	..... OC-12G	8½	11¾	9800	44	60	16½	16½	109⅝	76	57⅝	14	67¾	60.27	53.14	Op	4	2	10399	7831	5322	3161	.....	.....	1.60	2.34	3.34	5.27
24	..... OC-12D	8½	11¾	10140	44	60	16½	16½	109⅝	76	57⅝	14	67¾	58.96	53.05	Op	4	2	11333	8310	5706	3391	.....	.....	1.60	2.34	3.34	5.27
25	..... OC-15	9	14¼	14470	....	74	16½	15½	127½	90	78¼	16	78¼	82.00	70.00	Op	4	2	15300	10000	6750	4080	.....	.....	1.67	2.64	3.76	5.60
26	..... OC-18	12½	16⅞	32000	78	....	30⅝	19¼	167½	111¾	82½+	22	100¼	.....	133.02	Op	4	2	31028	18513	11788	6880	.....	.....	1.50	2.61	3.76	5.45
27	..... OC-6	6⅝	20	5280	32	68	17¼	15¼	121½	82¼	56¼+	8	54½	37.90	32.99	Op	5	2	6215	4681	3426	2532	1990	897	1.88	2.44	3.23	4.19
28	..... OC-6	6⅝	20	5425	32	68	17¼	15¼	121½	82¼	56¼+	8	54½	37.40	34.74	Op	5	2	6779	5204	3708	2729	2104	922	1.88	2.44	3.23	4.19
29	Terratrac 200	.....	16	4500	36	72	16	15	92	82	63½	10	54	36.50	.....	Op	3	1	5120	3240	1970	.....	.....	.....	1.74	2.75	4.52	....
30	 300	.....	16	4606	36	72	16	15	92	83	63½	11	54	36.50	.....	Op	3	1	5580	3520	2150	.....	.....	.....	1.74	2.75	4.52	....
31	 400	.....	16	4850	36	72	16	15	101	84	63½	12	57	42.50	.....	Op	3	1	5990	3770	2305	.....	.....	.....	1.74	2.75	4.52	....
32	 500	.....	16	5016	36	72	16	15	101	85	63½	13	57	50.00	.....	Op	3	1	11200	7180	2660	.....	.....	.....	1.88	2.97	4.88	....
33	 800	11¼	17	6800	49	49	16	16	101	63	65	14	62⅝	62.00	.....	.....	4	4	15880	9000	7750	4450	.....	.....	1.66	3.22	3.40	6.56

ABBREVIATIONS

♦—Exclusive of exhaust stacks.
‡—At dash board.
‡‡—Total for all cases.
^—With converter.
■—Two engines used.
^—Independent power to each track.
†—2nd reverse speed, 3.50; 3rd, 7.80.
*—4 reverse speeds: 2nd, 3.60; 3rd, 5.20; 4th, 6.60.
**—2nd reverse speed, 3.00; 3rd, 3.50; 4th, 6.20.
++—9690 lb. in 6th speed; 7320 lb. in 7th; 5490 lb. in 8th.
^^—5.40 mph in 6th speed; 6.30 mph in 7th; 8.00 mph in 8th.
‡‡—8 reverse speeds ranging from 1.60 to 7.80.
^^—2nd reverse speeds, 3.50; 3rd, 4.40.
*—Each engine.
▼—Electric starter optional.
(a)—4 roller; 6; 5 roller, 6½
(b)—4 roller, 4200; 5 roller, 4700.
(c)—4 roller, 56; 5 roller, 66⅝.
(d)—4 speed std.; 5 speed opt.
**—Included in transmission and final drive.
AL—Electric Auto-Lite Co.
All—Allison Div.
A-R—Auburn or Rockford.
Aub—Auburn Clutch Co.
Bos—American Bosch Co.
Clu—Clutches.
Cont—Continental Motors Corp.
D—Distillate.
Dif—Differential.
DO—Double plate, operating in oil.
Don—Donaldson Co.
DP—Double plate dry.
DR—Delco Remy Div.
Ele—Electric.

Tractors on Farms by Type and Geographical Divisions

As reported in the 1954 Census of Agriculture

Geographical Divisions	Farms with Tractors in Per Cent of All Farms: 1954	1950	1945	1940	1930	1925	Tractors on Farms by Type—1954: Total	Wheel	Crawler	Garden
New England	60.2	44.9	31.1	19.2	10.5	4.6	74,565	59,573	3,243	11,749
Middle Atlantic	77.4	63.6	49.7	33.0	21.5	11.3	334,007	280,279	12,161	41,567
East North Central	82.6	69.4	56.4	39.9	24.7	13.5	1,141,459	1,005,046	15,692	120,721
West North Central	83.3	71.8	61.2	44.7	26.5	13.7	1,315,793	1,246,731	18,208	50,854
South Atlantic	38.6	23.2	11.1	5.6	4.2	2.6	447,273	399,756	9,032	38,485
East South Central	31.8	18.8	7.7	3.6	2.1	1.3	325,380	305,891	4,921	14,568
West South Central	50.0	38.4	25.3	14.9	5.7	2.9	518,436	492,677	7,605	18,154
Mountain	74.6	64.8	44.3	26.3	17.9	7.7	248,307	214,365	22,022	11,920
Pacific	67.3	56.8	38.4	27.6	20.8	13.4	287,121	181,462	66,570	39,089
U. S. Total	60.1	48.9	34.2	23.1	13.5	7.4	4,692,341	4,185,780	159,454	347,107

For Directory of the Tractor Manufacturers listed above, see Table of Contents

1957 / TRACTORS

TRACK-LAYING TYPES

Travel Speeds at Normal Governed Engine R.P.M.				ENGINE									FUEL											BELT PULLEY				CAPACITIES						
Fifth Gear (M.P.H.)	Sixth Gear (M.P.H.)	Low Reverse (M.P.H.)	High Reverse (M.P.H.)	Make and Model	Cycle	No. of Cylinders—Bore and Stroke (In.)	Displacement (Cu. In.)	R.P.M. at Governed Speed	S.A.E. or Tax Hp.	Valve Arrangement	No. of Main Bearings	Diam. Main Bearings (In.)	Standard	Optional	Ignition—Make	Carburetor or Injector Pump—Make	Air Cleaner—Make	Governor—Make	Oiling System—Type	Cooling System—Type	Clutch—Make and Type	Drive Type to Traction Members	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts. Each Case)	Starting Method	Line Number
5.50	....	2.00	....	Own. HD344	4	4-4 7/16x5 1/2	344	1800	31.5	I	....	....	O	N	N	Bos	Uni	Bos	P	Pu	A-R . SP	SG	12	8 1/4	963	Clu	6 1/2	40	10	20	12	Ele	1
4.40	5.70	1.60	^^	Own. HD516	4	6-4 1/16x5 1/2	516	1800	47.3	I	....	....	O	N	N	Bos	Uni	Bos	P	Pu	A-R . SP	SG	13 1/16	10	1045	Clu	10	60	15	27	13	Ele	2
....	....	3.20	5.50	Own. HD844	4	6-5 1/16x6 1/2	844	1800	66.1	I	....	....	O	N	N	Bos	Uni	Bos	P	Pu	TD . ^SP	SG	18	15	693	Clu	17	100	24	32	22	Ele	3
....	....	5.50	....	Own HDS844	4	6-5 1/16x6 1/2	844	1800	66.1	I	....	....	O	N	N	Bos	Den	Bos	P	Pu	TD . ^SP	SG	20	15	780	Clu	20	135	24	39	30	Ele	4
5.50	....	2.20	....	Own. D2	4	4-4x5	282	1650	25.6	I	5	2 1/4	D	....	....	Own	Don	Own	P	Pu	Own . SP	SG	12	7 1/2	960	Clu	7 1/2	26	14	8	4 1/2	GE	5
6.10	....	2.20	....	Own. D4	4	4-4 1/2x5 1/2	350	1600	32.4	I	5	3 1/2	D	....	....	Own	Don	Own	P	Pu	Own . SP	SG	14	8 1/2	960	Clu	11	30	15	18	7	GE	6
6.60	....	2.00	6.20	Own. D6	4	6-4 1/2x5 1/2	525	1600	46.6	I	7	3 1/2	D	....	....	Own	Don	Own	P	Pu	Own . DO	SG	13 1/16	13	1043	Clu	14 1/2	48	22	42	9 1/2	GE	7
5.90	....	1.80	5.40	Own. D7	4	4-5 1/2x8	831	1200	52.9	I	5	3 3/4	D	N	....	Own	Don	Own	P	Pu	Own . DO	SG	17 5/16	15	831	Clu	17	85	5 1/2	10 1/2	5 3/4	GE	8
5.20	....	2.00	3.80	Own. D8	4	6-5 1/2x8	1246	1200	79.4	I	7	3 3/4	D	N	....	Own	Don	Own	P	Pu	Own . TO	SG	14 1/16	15	1015	Clu	25	118	8 3/4	8 1/4	5	GE	9
5.00	7.00	1.70	7.00	Own. D9	4	6-6 1/2x8	1473	1240	93.6	I	7	4 1/16	D	N	....	Own	Don	Own	P	Pu	Own . FO	SG	....	....	....	Clu	35	157	9	13	13 1/2	GE	10
....	....	1.65	....	Own. 420	4	2-4 1/2x4	113	1850	14.5	I	2	2 11/16	G	TF	DR	Mar	Don	Own	P	Pu	Aub . SP	SG	9 1/16	6 1/16	1270	Clu	2 1/4	10 1/2	5	6 1/2	1 3/4	Ele	11
....	....	2.00	†	GM* . 6-71	2	6-4 1/2x5	426°	2100	43.4	I	7	3 1/2	O	N	....	GM	Ver	GM	P	Pu	All^	....	N	....	....	▲	19°	84 1/2°	20°	—36°	Ele	12
5.70	....	1.60	....	Own. C264	4	4-4x5 1/4	264	1550	25.6	I	3	2 11/16	G	....	....	Own	Own	Uni	Own	P	Pu	Roc . SP	SG	12 1/16	8 1/2	811	Clu	9	33	9	16	2‡‡	Ele	13
5.70	....	1.60	....	Own. D264	4	4-4x5 1/4	264	1550	25.6	I	5	3 3/4	O	....	....	Own	Own	Uni	Own	P	Pu	Roc . SP	SG	12 1/16	8 1/2	811	Clu	10	33	9	16	2‡‡	Ele	14
5.90	....	1.90	....	Own. D350	4	4-4 1/2x5 1/2	350	1550	32.4	I	5	4 1/2	O	....	....	Own	Own	Uni	Own	P	Pu	Roc . SP	SG	11	8 1/2	973	Clu	12	33	11	22	3‡‡	....	15
4.50	5.80	2.80	3.50	Own. D461	4	4-4 5/8x6 1/2	461	1650	36.1	I	5	3 1/4	O	....	....	Own	Own	Uni	Own	P	Pu	Roc . SP	SG	11 3/4	11	1030	Clu	11	61	18	24	15‡‡	Ele	16
4.50	5.50	1.60	3.40	Own. D691	4	6-4 1/2x6 1/2	691	1450	54.1	I	7	3 1/2	O	....	....	Own	Own	Uni	Own	P	Pu	Roc . . S	SG	11 3/4	11	908	Clu	15	75	26	30	20‡‡	Ele	17
4.20	^^	‡‡	‡‡	Own. D1091	4	6-5 1/2x7	1091	1400	79.3	I	7	4 1/2	O	....	....	Own	Own	Uni	Own	P	Pu	Roc . DP	SG	N	....	....	PL	38	135	30	192	21	Ele	18
....	....	3.50	*	Own. D1091	4	6-5 1/2x7	1091	1500	79.3	I	7	4 1/2	O	....	....	Own	Own	Uni	Own	P	Pu	TD . TC	SG	N	....	....	PL	40	135	30	192	21	Ele	19
....	....	2.33	....	Here. IXB3	4	4-3 1/16x4	133	1700	16.9	L	3	2	G	K	WI	Mar	Ver	Han	P	Pu	Lg . . SP	SG	8 1/2	6 1/2	2310	Dif	2 1/4	12	5 1/2	8	5/8	HC*	20
....	....	1.36	....	Cont. F226	4	6-3 1/16x4 5/8	226	1530	26.3	L	4	2 1/16	G	K	Bos	Til	Ver	Novi	P	Pu	Lg . . DP	SG	10 1/2	8 1/2	1130	Dif	5	18	8	40	**	HC*	21
....	....	1.36	....	Here. DOOC	4	4-4x4 1/2	226	1530	25.6	I	5	3	O	....	....	RM	Ver	RM	P	Pu	Lg . . DP	SG	10 1/2	8 1/2	1130	Dif	5 1/2	18	13	40	**	Ele	22
....	....	1.72	3.60	Here. JXLD	4	6-4x4 1/2	339	1750	38.4	L	7	2 1/4	G	K	DR	Mar	Don	Pie	P	Pu	Lg . . DP	SG	12	8 1/2	1034	Dif	6	35	7	32	8	Ele	23
....	....	1.72	3.60	Here. DJXC	4	6-3 5/16x4 1/2	298	1750	33.6	I	7	3	O	....	....	RM	Don	Bos	P	Pu	Lg . . DP	SG	12	8 1/2	1034	Dif	6	35	12	32	8	Ele	24
....	....	1.99	4.48	Here. DRXC	4	6-4 5/16x5 1/4	529	1650	51.3	I	7	3 1/16	O	....	....	RM	Don	Har	P	Pu	Roc . . SP	SG	13	11	975	Dif	5	40	12	32	16‡‡	Ele	25
....	....	1.83	3.53	Here. DFXE	4	6-5 5/16x6	895	1500	75.9	I	7	4 1/2	O	....	....	Bos	Ver	Bos	P	Pu	Roc . OD	SG	N	....	....	Dif	15 1/2	66	34	104	20	Ele	26
5.15	....	1.92	3.31	Own. . OC6	6	3-4 1/16x3 1/4	194	1600	26.3	I	4	2 1/2	G	....	DR	Mar	Ver	Own	Pa	Pu	Lg . . SP	SG	10	6 1/4	1184	Dif	4 1/2	16 1/2	5	22	4 1/2	Ele	27
5.15	....	1.92	3.31	Own. . OC6	6	3-4 1/16x3 1/4	194	1600	26.3	I	4	2 1/2	O	....	....	Bos	Don	Bos	Pa	Pu	Lg . . SP	SG	10	6 1/4	1184	Dif	4 1/2	16 1/2	5	22	4 1/2	Ele	28
....	....	2.01	....	Cont. F140	4	4-3 5/16x4 1/2	140	1850	16.3	L	3	2 1/4	G	N	AL	Mar	Ver	Novi	P	Pu	Roc . SP	SG	8 1/2	6 1/2	1007	Dif	2 1/2	10	4	8	5‡‡	Ele	29
....	....	2.01	....	Cont. F162	4	4-3 7/16x4 5/8	162	1850	16.3	L	3	2 1/4	G	N	AL	Mar	Ver	Novi	P	Pu	Roc . SP	SG	8 1/2	6 1/2	1907	Dif	2 1/2	10	4	8	5‡‡	Ele	30
....	....	2.01	....	Cont. F162	4	4-3 7/16x4 5/8	162	1850	18.9	L	3	2 1/2	G	O	AL	Mar	Ver	Novi	P	Pu	Roc . SP	SG	8 1/2	6 1/2	1007	Dif	3	18	4	8	5‡‡	Ele	31
....	....	2.17	....	Cont. FA162	4	4-3 7/16x4 5/8	162	2250	18.9	L	3	2 1/4	G	O	AL	Mar	Ver	Novi	P	Pu	Roc . ^SP	SG	8 1/2	6 1/2	1007	Dif	3 1/2	18	4	8	5‡‡	Ele	32
....	....	1.62	**	Cont. F209	4	6-3 7/16x4 5/8	209	2250	24.4	L	3	....	G	O	AL	Mar	Don	Novi	P	Pu	Lg^	SG	N	....	....	Hyd	4	25	5	28	6‡‡	Ele	33

FO—Four plate, operating in oil.
G—Gasoline.
GE—Independent gas engine.
GM—General Motors Corp.
Han—Handy Governor Corp.
Har—Hartford.
HC—Hand crank.
HE—Hand crank or electric.
Herc—Hercules Motor Corp.
Hyd—Hydraulic power and pivot turns
I—In head (Valves).
K—Kerosene.
L—"L" head (Valves).
Lg—Long Mfg. Div.
Mar—Marvel-Schebler Carburetor Div
N—No or none.
Novi—Novi Equipment Co.
O—Diesel fuel.
OD—Over center, double plate.
Op—Optional.
P—Pressure.
PL—Planetary.
Pa—Pressure and splash.
Pu—Pump.
RM—Roosa-Master.
Roc—Rockford Drilling Machine Div.
S—Single plate.
SG—Spur gear.
SP—Single plate, dry.
TC—Torque converter.
TD—Twin Disc Clutch Co.
TF—Tractor fuel.
Til—Tillotsen Mfg. Co.
TO—Triple plate, operating in oil.
Uni—United Specialties.
Ver—Vortex Mfg. Co.
WI—Wico Electric Co.
Zen—Zenith Carburetor Div.

For Directory of the Tractor Manufacturers listed above, see Table of Contents

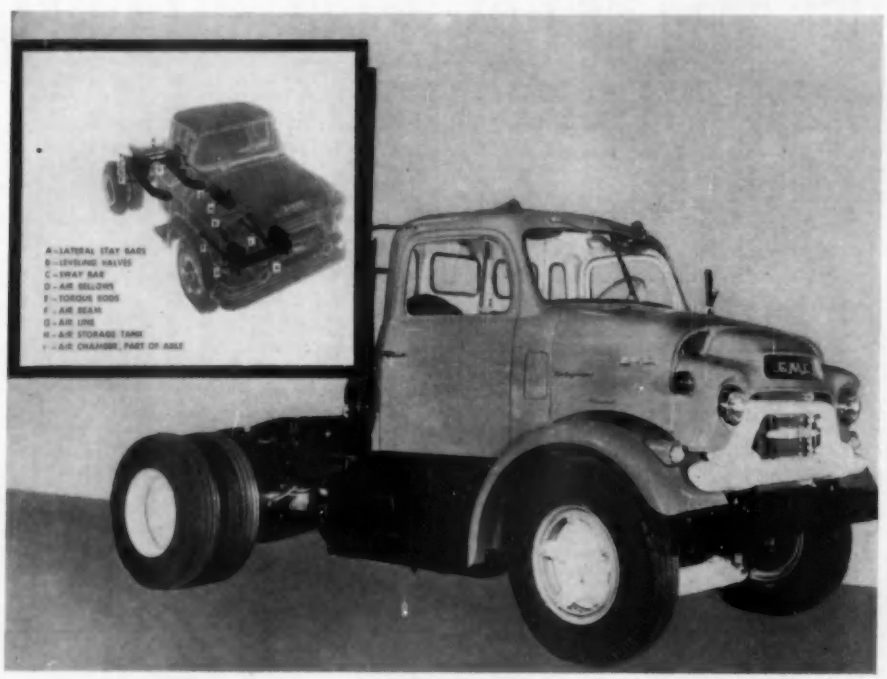
Military Cargo Vehicle Specifications

MODEL	Manufacturer	PAY-LOAD (Tons)		WEIGHT (Lbs.)		OVERALL DIMENSIONS (In.)			Axle Ground Clearance (In.)	ENGINE					Maximum Speed (Mph)	Max. Fording Depth (In.)	Cruising Range—Miles	TRANSMISSION				Differential—Type	Suspension—Type	SERVICE BRAKES		Wheelbase (In.)
		Cross Country	Highway	Empty	Fully Equipped	Width	Length	Height		Make	No. of Cylinders, Bore and Stroke	Displacement (Cu. In.)	Fuel Used	Cooling Medium	Max. Brake Hp. at R.P.M.				Make	Type	No. of Forward Speeds	No. of Reverse Speeds	Transfer Case			Actuated by	Type	
M38A1	WM	3/4	3/4	2,665	3,465	62	136 5/16	73 3/4	9 1/4	WM	4-3 1/16x4 5/8	134.2	G	Liq	72-4000	60	72	200	WM	Co	3	1	2s	Co	SE	.....	Hd	81
M37	Do	3/4	1	5,950*	7,800*	73 1/2	189 5/16	89 1/4	10 3/4	Do	6-3 1/16x4 5/8	230.2	G	Liq	94-3200	55	72	225	Do	Co	4	1	2s	Co	SE	.....	Hd	112
M35	Reo	2 1/2	5	12,880*	18,230*	96	274 5/8	111 1/8	10 3/8	Reo	6-4 1/2x4 1/2	331.0	G	Liq	146-3400	62	72	280	Spi	Co	5	1	2s	Co	Bcp	Air	Hd	154
M211	GM	2 1/2	5	13,590*	18,930*	96	269 1/4	112 5/8	12	GM	6-4x4	301.6	G	Liq	145-3400	58	72	300	GM	Hy	8	2	†	Co	Bcp	Air	Hd	156
M54	IH	5	10	19,945*	30,295*	97	314 1/4	116	11 1/2	CM	6-4 7/16x5 5/8	602.0	G	Liq	224-2800	53	72	214	Spi	Co	5	1	2s	Co	Bcp	Air	Hd	179
M8A1■	AC	7 1/2	....	44,500*	63,000*	123 1/2	265 1/8	120	18 1/2	CM	6-5 5/16x5 5/8	859.9	G	Air	500-2800	41	60	180	GM	Cr	2	1	.....	.....	Inb	Md	Me	157 1/4‡
M76■	GM	1 1/2	....	9,000	12,000	98	189	96 3/4	16 3/4	CM	4-4 5/16x4	268.8	G	Air	127-3200	28	Am	160	GM	Cr	2	1	.....	.....	Inb	Md	Me	96 3/4‡
M125	MT	10	15	32,000*	62,000	114	328	129	12 1/2	LR	8-5 1/16x4 7/8	844.0	G	Liq	297-2600	40	78	300	MT	Co	5	1	2s	Co	Bcp	Air	Hd	181 1/2
M274	WM	1/2	1/2	1,000*	1,000*	50	125	46	11 1/2	WM	4-2 5/16x2 1/4	53.0	G	Air	17-3200	28	12	...	WM	Co	3	1	2s	N	N	Ma	Me	57

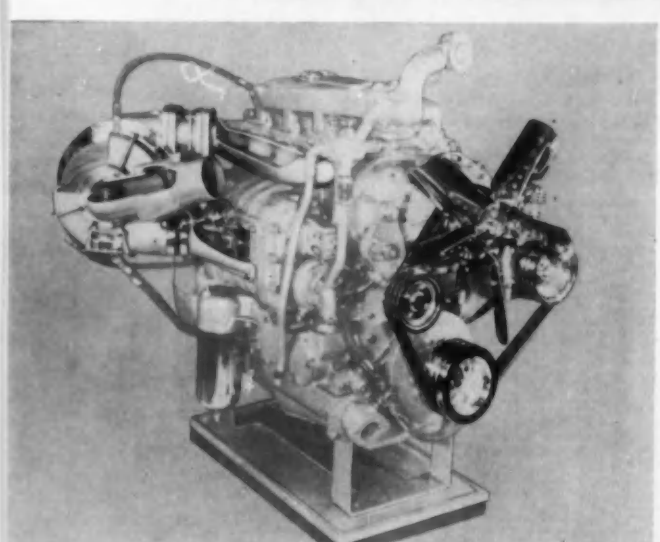
ABBREVIATIONS
*—With winch.
■—Tracked vehicles.
†—2 speed reduction unit on transmission.
‡—Track contact length.
2s—Two speed.
AC—Allis-Chalmers Mfg. Co.
Am—Amphibious.
Bcp—Bogie constant parallel arm (leaf springs)
Co—Conventional.
CM—Continental Motors Corp.
Cr—Cross drive.
Do—Dodge Division.
G—Gasoline.
GM—General Motors Corp.
Hd—Hydraulic.
Hy—Hydramatic.
IH—International Harvester Co.
Inb—Individual torsion bar.
Liq—Liquid. **LR**—Le Roi.
Ma—Manual.
Md—Multiple disc.
Me—Mechanical.
MT—Mack Trucks Inc.
N—None.
SE—Semi-elliptic.
Spi—Spicer Mfg. Div.
WM—Millys Motors.

U. S. Total	80.1	46.9	34.2	23.1	13.5	7.4	4,692,341	4,185,780	159,454	347,107

1957 Heavy-Duty GMC Trucks Feature Air Springs on 10 Models



One of GMC's new air suspension tractors, with an insert showing how the air suspension system operates, appears in this photograph. Air-filled rubberized bellows replace conventional leaf springs in the new vehicles. Air metered into the bellows by leveling valves keeps floor heights at a constant level.



This retouched photograph of a cutaway version of GMC's new 4-71T turbo-charged Diesel engine shows the power-plant's turbo-charger in bold relief at the left and its hydraulically-driven fan in bold relief at the right.

LIGHTWEIGHT aluminum cabs, powerful turbo-charged Diesel engines, and 10 basic models with air suspension are features of heavy-duty GMC trucks for 1957.

Trailer cubic capacity can be increased three to eight per cent with air suspension because the fifth wheel on the tractor has been lowered with this construction.

The basic GMC models in which air-filled, rubberized bellows replace conventional leaf springs have gross combination weights ranging from 50,000 to 65,000 lb.

All GMC air suspension tractors can be used with any kind of trailer or semi-trailer, regardless of whether they have conventional steel spring or torsional suspensions.

New lightweight cabs with aluminum construction features that substantially reduce over-all vehicle weight are featured on all 800 and 860 air suspension models.

(*Turn to page* 348, *please*)

‡—Track contact length.
Co—Conventional.
Hd—Hydraulic.
Md—Multiple disc.
WM—Millys Motors.

Horizon Unlimited

for automotive progress

Today's remarkable automotive achievements
are the challenge, inspiration
and promise of still better cars to come.

19 of the 20 makes of passenger cars use essential parts engineered and produced by

BORG-WARNER

ENGINEERING B-W PRODUCTION

THESE UNITS FORM BORG-WARNER, Executive Offices, 310 S. Michigan Ave., Chicago. DIVISIONS: ATKINS SAW • BORG & BECK • BYRON JACKSON • CALUMET STEEL • FRANKLIN STEEL • INGERSOLL CONDITIONED AIR • INGERSOLL KALAMAZOO • INGERSOLL PRODUCTS • INGERSOLL STEEL • LONG MANUFACTURING • MARBON CHEMICAL • MARVEL-SCHEBLER PRODUCTS • MECHANICS UNIVERSAL JOINT • NORGE • PESCO PRODUCTS • PRIMOR PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • WARNER AUTOMOTIVE PARTS • WARNER GEAR • WOOSTER DIVISION • YORK • **SUBSIDIARIES:** B-W ACCEPTANCE CORP. • BORG-WARNER INTERNATIONAL • BORG-WARNER, LTD. • BORG-WARNER SERVICE PARTS • BYRON JACKSON OF CANADA, LTD. • EBERHARDT-DENVER CO. • LONG MFG., LTD. • MORSE CHAIN • MORSE CHAIN OF CANADA, LTD. • REFLECTAL CORP. • WARNER GEAR, LTD. • WESTON HYDRAULICS, LTD.

hydraulically-driven fan in bold relief at the right.

(Turn to page 348, please)

Horizon Unlimited

Remember when you were a kid—how the new model cars seemed to have everything? How you couldn't think of a thing to improve them? How you wondered "where can they go from here?" And each year you saw the automotive industry's answer—with exciting advances in styling, engineering, performance and economy.

Now another year has rolled around, and once again the new models seem to have everything. Yet today's achievements are simply the challenge, inspiration and promise of still better cars to come.

From its inception, Borg-Warner has worked hand in hand with the automotive industry, contributing its engineering skills and production facilities to many noteworthy accomplishments.

Today 19 of the 20 makes of cars use B-W parts. Back of each is the basic B-W idea: "Design it better—make it better." Applied to the future, this is also Borg-Warner's pledge of continuing automotive progress.

Typical B-W Contributions to Automotive Progress

1900—The old time mixing valve was replaced by SCHEBLER carburetors.

1903—Radiators made of copper tubing with attached cooling fins introduced by LONG.

1913—The single plate clutch was developed by BORG & BECK, and silent timing chains were introduced by MORSE CHAIN.

1916—Universal joints were developed by MECHANICS.

1921—First standard type transmissions were introduced by WARNER GEAR.

1922—Double plate clutches were introduced by LONG.

1924—Vibration dampening fluxible center clutches introduced by BORG & BECK.

1930—Transmission synchronizer units produced by WARNER GEAR.

1931—Free wheeling was introduced to the industry by WARNER GEAR.

1934—Automatic overdrives for transmissions were introduced by WARNER GEAR.

1938—Borglite and Torbend clutch plates were introduced by BORG & BECK, LONG and ROCKFORD.

1949—Simpler, finer, more efficient automatic transmissions were introduced by DETROIT GEAR and WARNER GEAR.

1952—LP-Gas carburetion systems developed by MARVEL-SCHEBLER.

1953—Automatic transmissions for trucks introduced by WARNER GEAR and DETROIT GEAR.

1955—Morlife® clutches for heavy duty vehicles introduced by ROCKFORD.

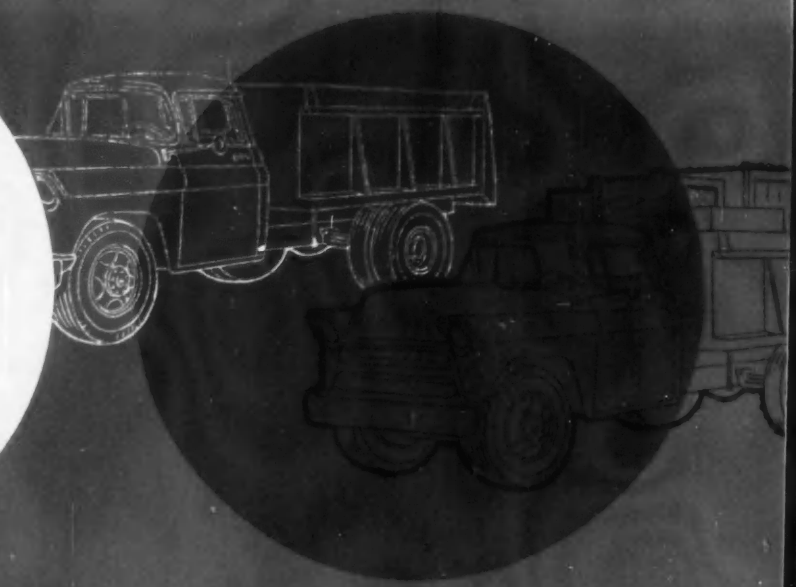
1956—Lightweight 3-lever clutches for trucks developed by BORG & BECK.

ENGINEERING B-W PRODUCTION

Almost every American benefits every day from the products of

BORG-WARNER

YOUR TRUCKS CAN HAUL HEAVIER LOADS



with NEW BORG & BECK A8 and A9 CLUTCHES

NEW THREE-LEVER DESIGN

LIGHTER WEIGHT—SHALLOWER

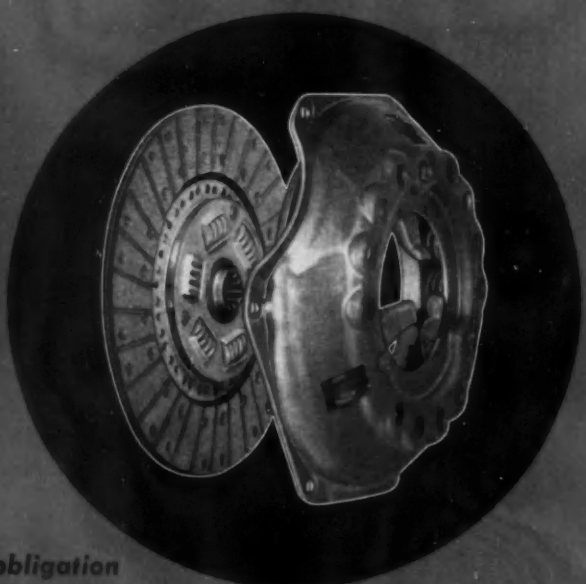
ARCH TYPE CONSTRUCTION FOR PROPER VENTILATION

SIZES TO 11"—FOR ALL BUT THE LARGEST TRUCKS

SMOOTHER, QUIETER OPERATION

EASIER ADJUSTMENT FOR MINIMUM MAINTENANCE

PRECISION BUILT—TESTED FOR BALANCE, UNIFORMITY



Consult our engineers—no obligation

BORG & BECK CLUTCH · THE STANDARD ·

Reg. U.S. Pat. Off.

BORG & BECK®

The automotive standard for more than 40 years

for that vital spot where power takes hold of the load!

ENGINEERING B-W PRODUCTION

Export sales:
Borg-Warner International • 36 South Wabash Ave., Chicago 3, Illinois

BORG & BECK DIVISION

BORG-WARNER CORPORATION • CHICAGO 38, ILLINOIS

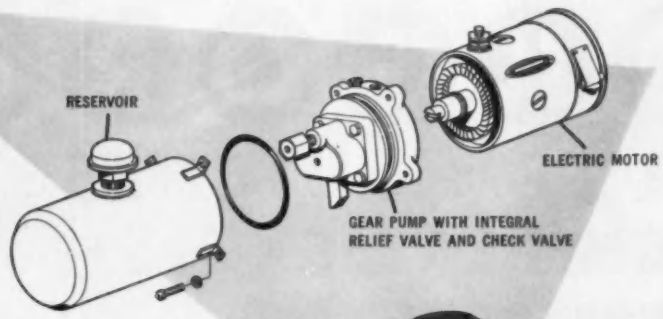
RUGGED

Manufacturers of the big diesel transports, that must stand up under hour-after-hour of gruelling service, have learned to rely upon MECHANICS Roller Bearing UNIVERSAL JOINTS to deliver hundreds of thousands of miles of trouble-free service. Because MECHANICS JOINTS drive through KEYS—instead of bolts—they stand up under punishment that shears off other types of fasteners. They are designed with less parts and connections for easy assembly and servicing—smooth running balance—maximum strength with less weight—and long, trouble-free, safe operation. Rugged stamina is just one of the advantages you get when you specify MECHANICS Roller Bearing UNIVERSAL JOINTS. Let MECHANICS engineers help you design this and other competitive sales features into your product's transmission train.

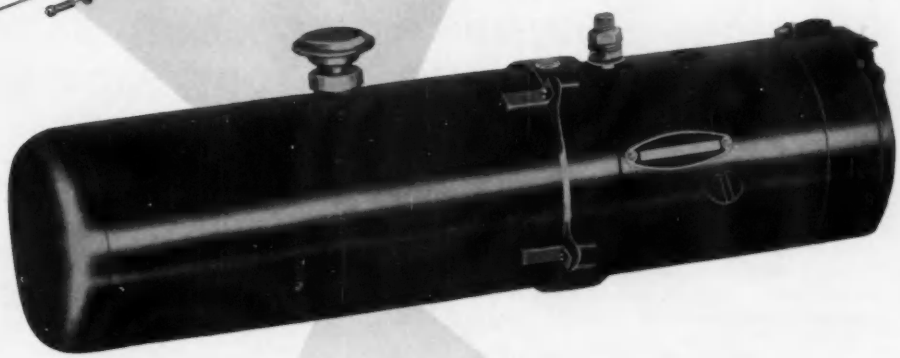
MECHANICS UNIVERSAL JOINT DIVISION
Borg-Warner • 2024 Harrison Ave., Rockford, Ill.
Export Sales: Borg-Warner International
79 E. Adams, Chicago 3, Illinois

MECHANICS
Roller Bearing B-W
UNIVERSAL JOINTS
For Cars • Trucks • Tractors • Farm Implements • Road Machinery • Aircraft • Tanks • Busses and Industrial Equipment

BORG-WARNER CORPORATION • CHICAGO 38, ILLINOIS



hydraulic power from a 6, 12 or 24-v. source...



Pesco Power Package is low-cost, self-contained, versatile unit

	D-C volts		
	6	12	24
Max. pressure-psi	2000	2000	2000
Capacity—gpm @ 2000 psi	.36	.60	.36
Capacity—gpm @ 1000 psi	.55	.80	.55
Approximate Wt.—lbs.	24	24	24
Electric Motor	Totally enclosed, intermittent duty		

▶Here's the answer to your problem of producing hydraulic power from an electrical source—the Pesco Hydraulic Power Package *available at a price you can afford.* Useful for countless applications, this dependable unit is of the same high quality that industry has come to expect from Pesco.

Pesco Hydraulic Power Packages incorporate an electric motor, hydraulic gear pump with integral relief valve, check valve and reservoir in one, compact assembly. The pump features "Pressure Loaded" bearings, Pesco's patented principle which assures higher volumetric efficiency and longer life.

Original equipment manufacturers are invited to obtain price quotations or detailed information.

These economical Pesco Power Packages are another reason why we say *Pesco means progress in pumps.*

PESCO PRODUCTS DIVISION
BORG-WARNER CORPORATION
24700 North Miles Road • Bedford, Ohio

PESCO . . . engineering Pesco production BW *means progress in pumps*

Write for information on interesting opportunities for development and manufacturing engineers.

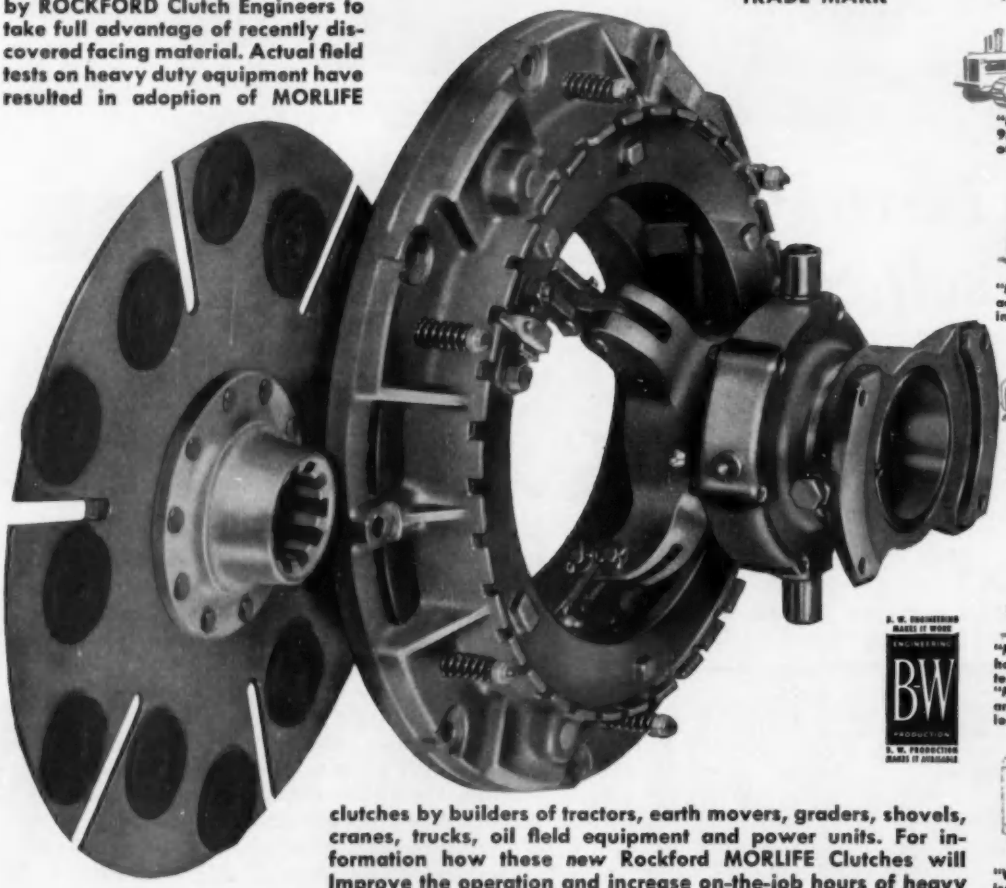
ROCKFORD

New MORLIFE* CLUTCHES and CLUTCH PLATES Give—

MORE Clutch Life (400% MORE)
MORE Torque Capacity (100% MORE)
MORE Heat Resistance (50% MORE)

These *new* ROCKFORD Clutches and Clutch Plates have been developed by ROCKFORD Clutch Engineers to take full advantage of recently discovered facing material. Actual field tests on heavy duty equipment have resulted in adoption of MORLIFE

*TRADE MARK



clutches by builders of tractors, earth movers, graders, shovels, cranes, trucks, oil field equipment and power units. For information how these *new* Rockford MORLIFE Clutches will improve the operation and increase on-the-job hours of heavy duty machines, write Department E.

"MORLIFE clutch has gone 851 hours without slipping or adjustment."

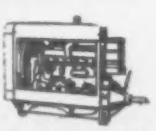
"MORLIFE clutch going strong after 1695 hours, working in sand."

"MORLIFE clutches last 950 hours longer, without adjustment."

"MORLIFE clutch needs adjustment once a month, instead of daily."

"MORLIFE requires lighter handle pull and one tenth the adjustments."

"MORLIFE requires lighter handle pull and one tenth the adjustments." "MORLIFE pulls harder and lasts six to ten times longer."



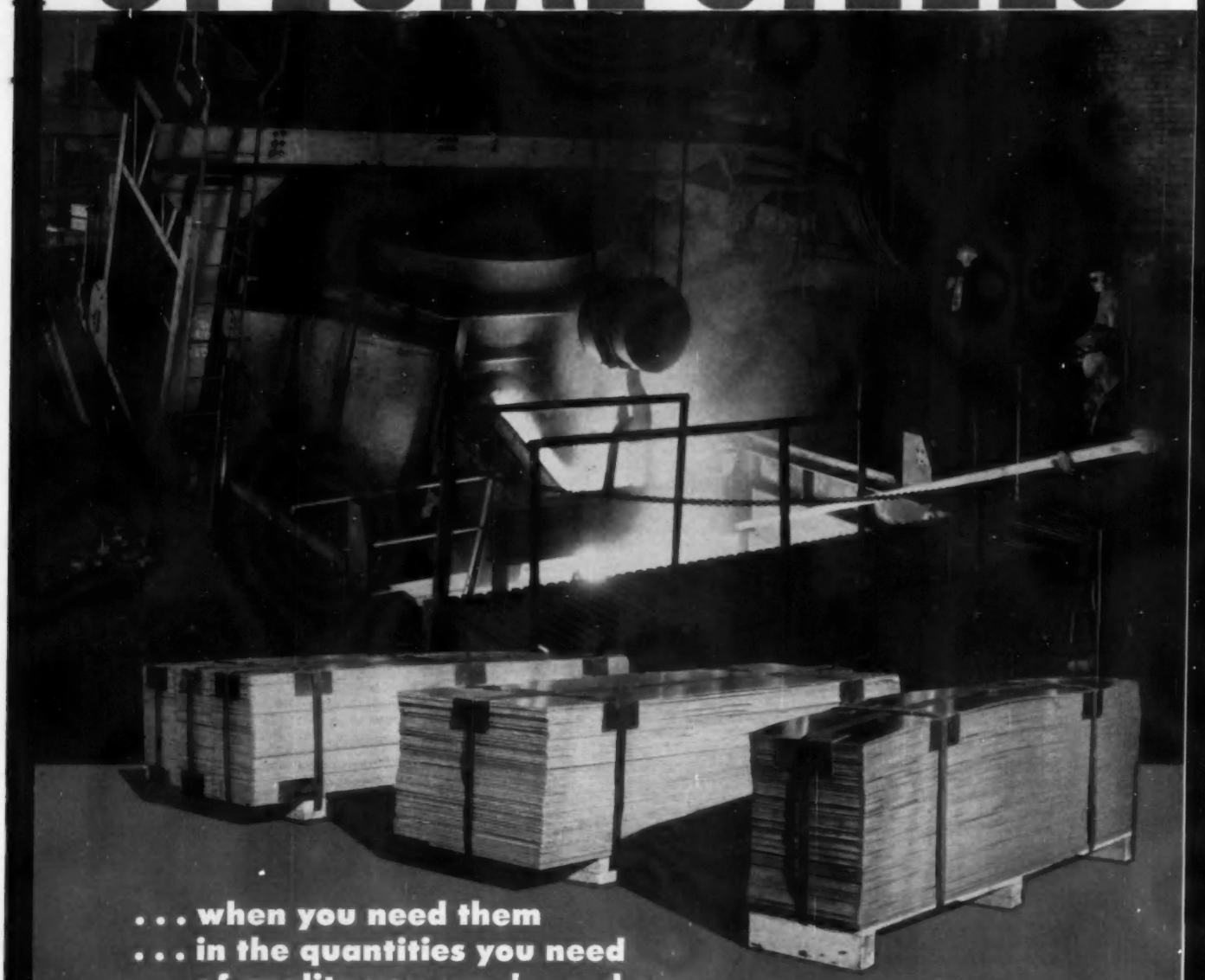
"Won't buy a unit that isn't equipped with Durable MORLIFE clutch."

ROCKFORD Clutch Division BORG-WARNER

315 Catherine Street, Rockford, Illinois, U.S.A.

CLUTCHES

SPECIAL STEELS*



. . . when you need them
. . . in the quantities you need
. . . of quality you can depend on

from centrally located Ingersoll Steel

When service counts, you can count on Ingersoll for a wide variety of special purpose steels.* Being a specialty mill, Ingersoll offers great flexibility in production scheduling, set up to fit your own requirements. Ingersoll's advantageous location at New Castle, Indiana assures prompt deliveries. And Ingersoll's modern quality-control facilities mean dependably uniform high quality from one order to the next. On all these counts, it will profit you to consult Ingersoll—a good name to know, a good place to go for the special steels you need.

* **stainless steels • heat resisting steels • ingAclad stainless-clad sheets • alloy steels • forging quality electric steel ingots • automotive clutch plate steels • Tem-Cross cross-rolled steel • carbon electric steel for tractor clutch discs • knife steels • saw steels • high speed hack saw steels • soft center and other agricultural steels • special analysis steels**

INGERSOLL STEEL B-W BORG-WARNER T.M.

Ingersoll STEEL DIVISION
Borg-Warner Corporation
New Castle, Indiana

22 BORG-WARNER DIVISIONS AND SUBSIDIARIES

Serve the Automotive Industry

BORG & BECK—clutches and torque converters for passenger cars, trucks and tractors.

BORG-WARNER INTERNATIONAL—export sales of automotive parts.

BORG-WARNER, LTD. (England)—automotive timing chains and sprockets, overdrives and automatic transmissions.

BORG-WARNER SERVICE PARTS—U. S. distribution of automotive service parts.

CALUMET STEEL—special automobile jack bar steel; small angles for auto seats.

FRANKLIN STEEL—special automobile jack bar steel; spring steel bumper supports; small angles for auto seats.

INGERSOLL PRODUCTS—tapered steel discs for truck wheels; automotive stampings.

INGERSOLL STEEL—automotive and tractor clutch discs; carbon electric steel for tank clutch plates; high carbon and alloy steel sheets; stainless and stainless-clad sheets and armor plate.

LONG MANUFACTURING—clutches and radiators for passenger cars, trucks, buses and tractors; torque converters; oil coolers for the automotive industry; automotive stampings; truck, tractor and bus transmissions; tractor axles and hydraulic pumps; gears and precision parts.

LONG MANUFACTURING CO., LTD. (Canada)—clutches and radiators for passenger cars, trucks, buses and tractors; oil coolers for the automotive industry.

MARBON CHEMICAL—adhesives for bonding rubber and synthetic rubber to metal and other materials; high impact thermoplastic resins.

MARVEL-SCHEBLER PRODUCTS—carburetors for military and industrial equipment and farm tractors; LPG carburetion systems; automatic transmissions.

MECHANICS UNIVERSAL JOINT—universal joints and propeller shafts for passenger cars, trucks, buses, aircraft, farm machinery, tractors, road machinery and mining machinery.

MORSE CHAIN CO.—automotive timing chains and sprockets.

MORSE CHAIN OF CANADA, LTD.—automotive timing chains and sprockets.

PESCO PRODUCTS—electric driven and engine driven hydraulic pumps; valves and electric motors for agricultural and industrial use.

ROCKFORD CLUTCH—spring-loaded and over-center clutches for automobiles, trucks, tractors, road-building, earth-moving and oil field machinery, industrial machinery, agricultural implements, machine tools (Pullmore). Power take-off and gear reduction units for gasoline and diesel engines.

SPRING DIVISION—torque converter parts and sub-assemblies; sprag type free wheeling clutches; special clutch plates and parts for automatic transmissions; precision flat and Belleville type springs; multislide and punch press stampings, plain and heat treated; special commercial heat treating; small electric motor commutators.

WARNER AUTOMOTIVE PARTS—for replacement purposes—ring gears and pinions; differential cases; differential internal gears and spiders; axle shafts; cast iron parts; transmission gears for passenger cars, trucks, tractors; power take-offs.

WARNER GEAR—automotive transmissions, overdrives, automatic transmissions, synchronizer assemblies, parking brakes, automotive and aircraft gears.

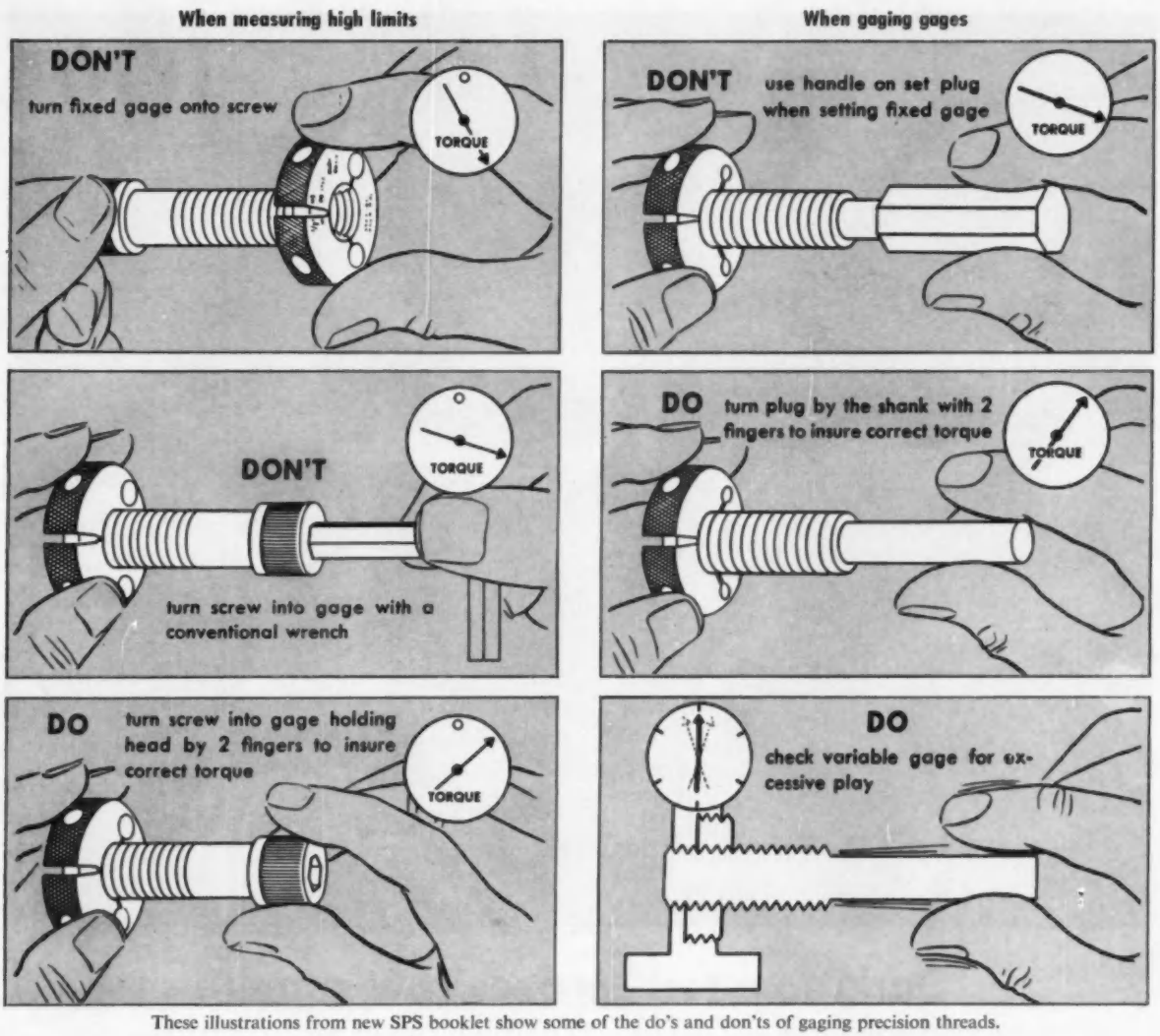
WARNER GEAR CO., LTD. (Canada)—synchronizer units for passenger cars and trucks.

YORK—refrigeration for trucks.

ENGINEERING B-W PRODUCTION

BORG-WARNER CORPORATION

310 S. MICHIGAN AVE., CHICAGO 4, ILLINOIS



These illustrations from new SPS booklet show some of the do's and don'ts of gaging precision threads.

3A threads: what they are; how to gage them — new SPS booklet tells all

Threads made to Class 3A fit are the most precise in general use in industry. But you do not always get the 3A precision you specify. Because of many different gaging techniques that yield varying results, screws with threads well outside the Class 3A tolerance limits often pass inspection.

SPS has prepared a new booklet on this subject. It explains clearly what Class 3A threads are and the pros and cons involved in the widely varying gaging techniques in use today. It reviews the gaging of high and low limits of 3A threads, sampling techniques, and even the methods of gaging gages.

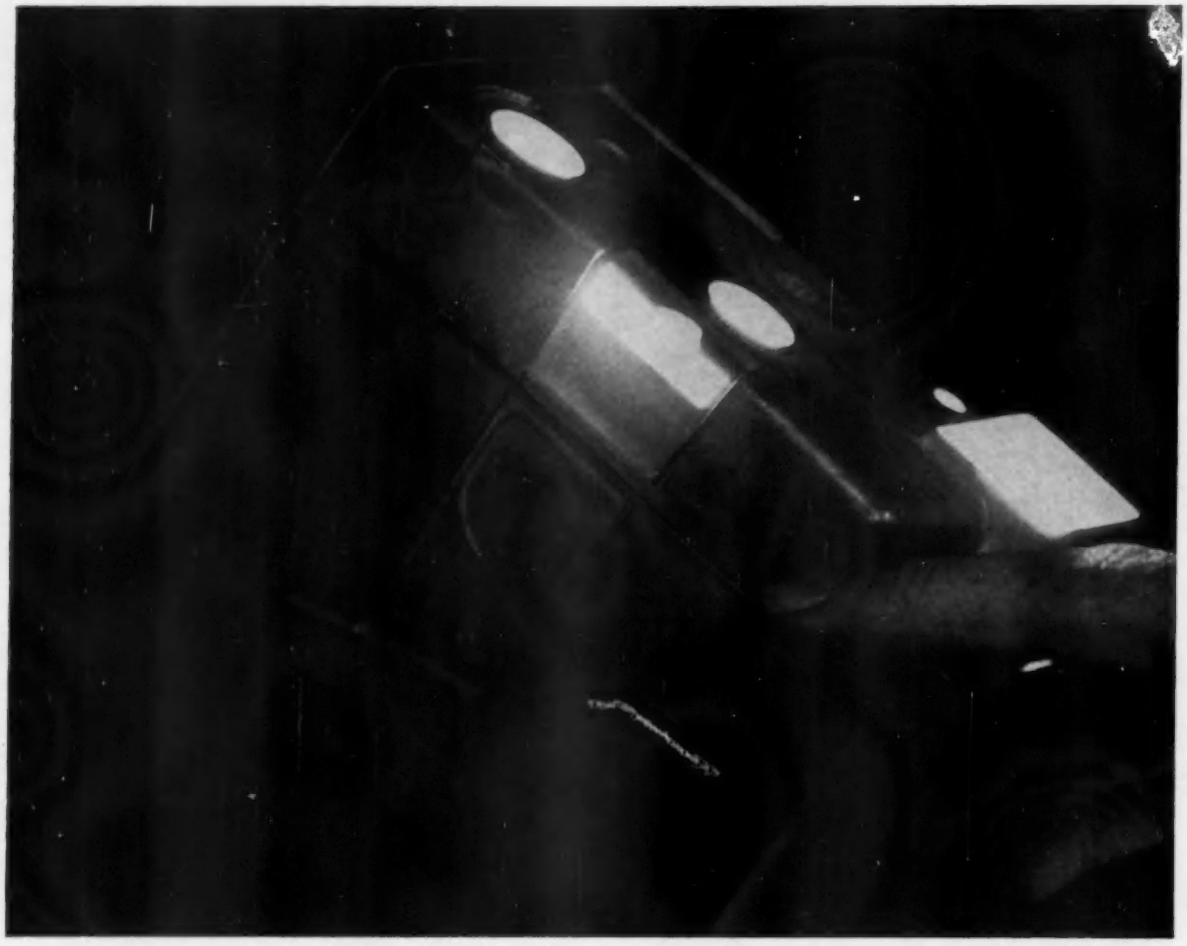
All standard UNBRAKO socket screw products fall within specified tolerance limits *no matter what method is used to gage them.* Leading industrial distributors carry complete stocks. Unbrako Socket Screw Division, STANDARD PRESSED STEEL Co., Jenkintown 53, Pa.

Form 2239, "Class 3A Threads: what they are; how to gage them." 16 pages, with many illustrations. Write for free copy today.

STANDARD PRESSED STEEL CO.

UNBRAKO® SOCKET SCREW DIVISION SPS

JENKINTOWN PENNSYLVANIA



"Darkroom test* proves raw camera castings

High precision of Doehler-Jarvis make new cameras light-tight

Revere-made Wollensak "43" 8 M/M spool-type turret camera. Built-in filters provide finger-tip adjustment for three conditions: (1) clear shooting (2) haze (3) outdoor shots with indoor film.

Lights! Camera! Action . . .

Our hero (in darkroom above) has just snapped together the three die castings that house the new Revere-made home movie camera shown left . . . snapped them together around a tell-tale light.

The castings are raw . . . just as they come from Doehler-Jarvis. Notice no light escapes where the housing parts join. *Even before machining, the seal is light-tight.*

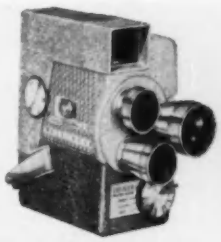
That's precision for you. The kind Revere Camera Company expects and gets from Doehler-Jarvis.

What's more, each casting provides, "no-tolerance" machining base points. From these points Revere establishes all basic dimensions for machining of the camera mechanism. They get an accuracy so high they can afford to offer a lifetime guarantee on the action.

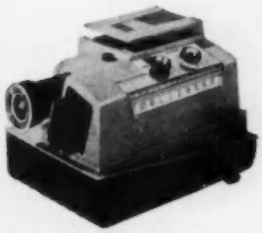
Realizes many design advantages

Revere designs from the start to take full advantage of die casting. In most models, for example, Doehler-Jarvis is called in while units are still in the hand sketch stage.

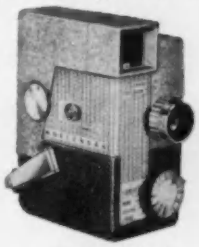
In this instance, details worked out include the use of lightweight magnesium; ways to reduce wall thicknesses (they're way thinner than ADCI minimums); location



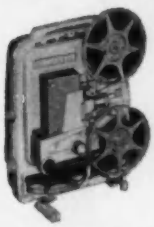
Wollensak "43"
8 MM Spool-type Turret Camera



Wollensak "815"
Automatic Slide Projector, 2x2

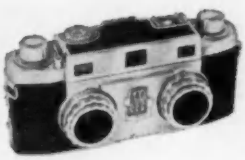


Wollensak "42"
8 MM Spool-type Cine Camera



Wollensak "715" 8 MM
Movie Push-button Projector

Wollensak "23"
8 MM Magazine Turret Camera



Wollensak "10"
Stereo Camera

*Darkroom test illustrates precision of the raw Doehler-Jarvis die castings as received for use in the above Revere-made Wollensak cameras and equipment. Revere subjects the finished cameras to a much more severe 4-hour direct sunlight test. You can be *sure* they're light-tight.

fit so closely light doesn't pass..."

die castings helps Revere even before machining

of bosses, lugs, corner reliefs; extra back-up for stressed sections; tool-ups for machining and finishing; interchangeability between this and other models. All this pushes ultimate costs down, quality up.

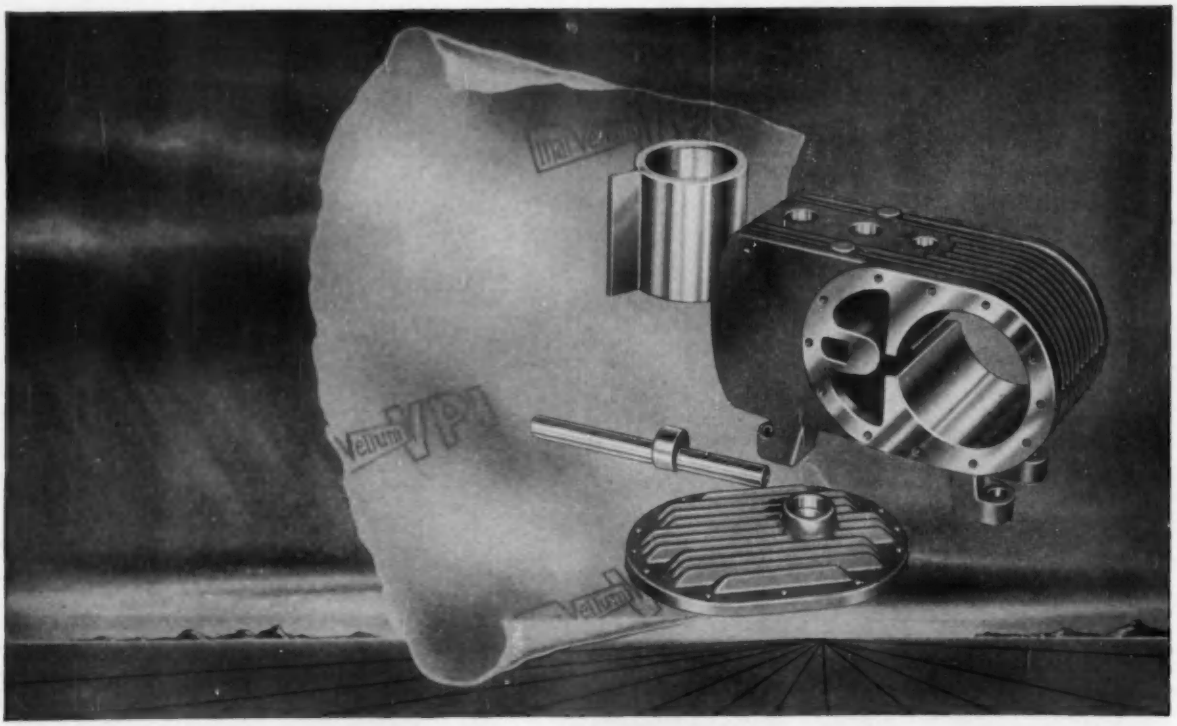
Net result is an outstanding camera that is proving itself on the sales counter.

Doehler-Jarvis die-casts parts for all Revere-made cameras and projectors, not only their name line, but also Wollensak and other brands. Asked why they prefer die castings made by Doehler-Jarvis, Revere put it very simply: "rejects almost zero" . . . "likewise salvage" . . . "D and J people live with our jobs".

Right now Doehler-Jarvis people are "living with" the jobs of some 1400 major users of die castings. They'll do the same for you.

Doehler-Jarvis
DIVISION OF NATIONAL LEAD COMPANY
General Offices: Toledo 1, Ohio

In Canada:
Barber Die Casting Co. Limited
Hamilton, Ontario



Rust-preventive packaging-costs cut 24¢ a unit. Protection effective up to 5 years with Marvellum VPI®

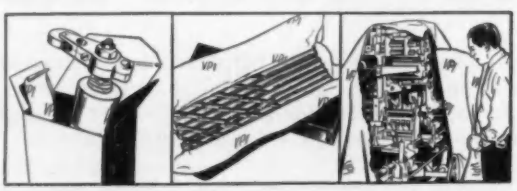
Rust preventive packaging for in-plant storage of pumps and parts was costing manufacturer 40¢ a unit. By using Marvellum VPI® costs were reduced to 16¢ a unit. Savings: 60%. In addition, Marvellum VPI assured positive long-range protection against corrosion, while the old method was known to fail.

Positive Protection This new, chemically treated paper, Marvellum VPI, is the most effective rust preventative available today. It stops rust for years by releasing an invisible vapor that forms a thin film on ferrous metals.

Simple, Easy to Use Protection Marvellum VPI provides complete protection without grease or gunk. The VPI wrap does not have to conform carefully to the shape of the article, tight sealing of the package is not necessary. It can be used as a wrap, a package liner or a cover for any size or shape of product. And the protected article can be removed, examined and replaced without destroying the effectiveness of the protective package.

Inexpensive Protection Used as a package liner, a small strip (2" x 2½") protects a critical electronic switch for 1/10¢; a machine tool valued in the thousands can be shrouded with Marvellum VPI for as little as $1.00.

Versatile Protection Marvellum VPI can be tailored to your specific product and packaging needs. It's available in rolls, sheets, shrouds, bags and envelopes, and can be imprinted with your trade mark or sales message. *Write today for free samples and complete technical data.*



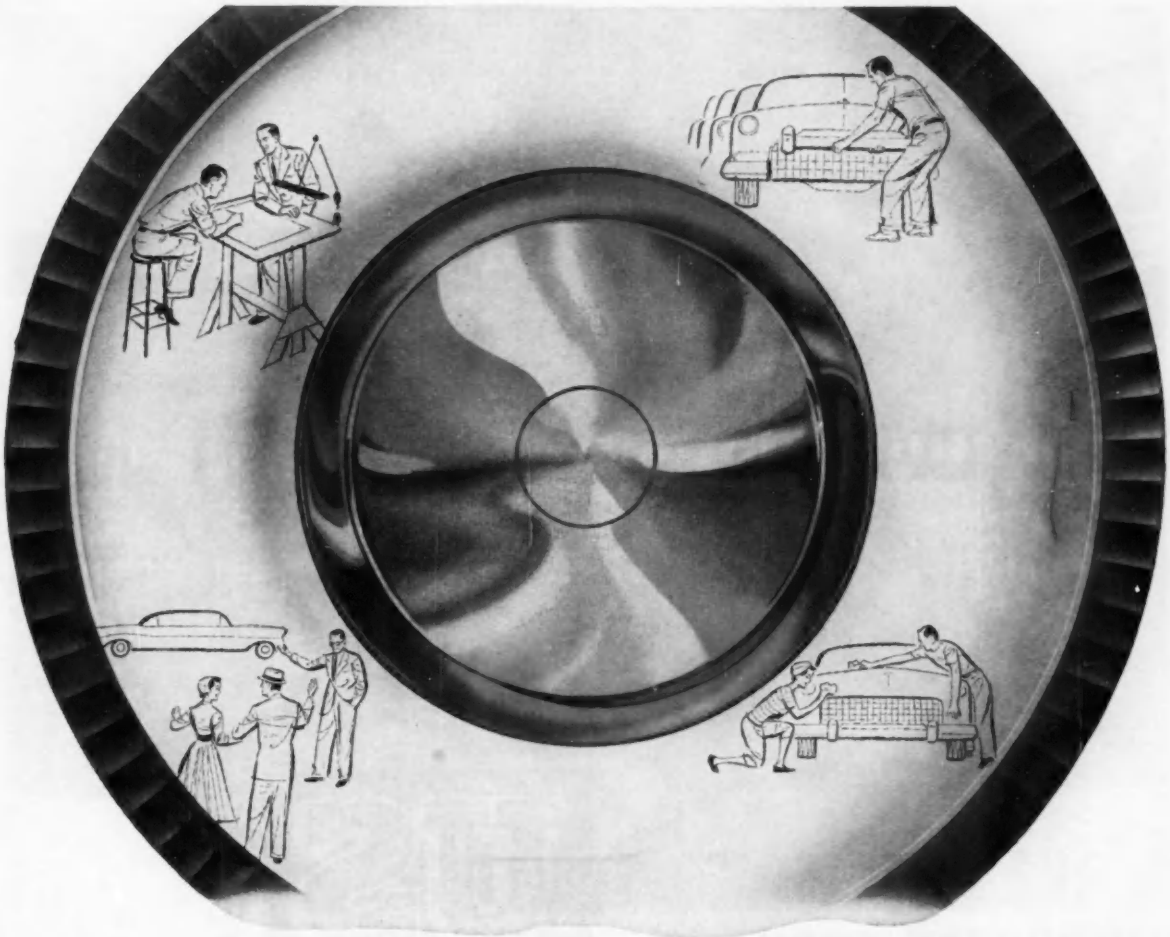
VPI Strip (2" x 2½") prevents Corrosion of critical electronic switch for 18 months in storage and on dealer's shelf

VPI Wrapper stops rust — product can be removed for display or inspection and returned to VPI protection.

VPI Cover provides rust-free transit of valuable machine tool. Tool arrives ready to use; no gunk or grease to remove.

THE MARVELLUM COMPANY marvellum **HOLYOKE, MASSACHUSETTS**

Custom coating, printing, embossing and laminating of papers, foils and films.



IN THE PLANT...SHOWROOM...DRIVEWAY

everybody goes for STAINLESS STEEL!

Stainless steel means many things to many people!

To you in the industry, its exceptional versatility means almost limitless freedom. With one metal, *designers and engineers* work with beauty (set off by a wide variety of finishes), fabricating ease, remarkable structural strength, and great resistance to all weather conditions.

In production, stainless eliminates many production steps — plating or other treating operations.

To your salesmen, it's a feature they can stress. Its beauty, permanence, cleanability are helpful selling aids.

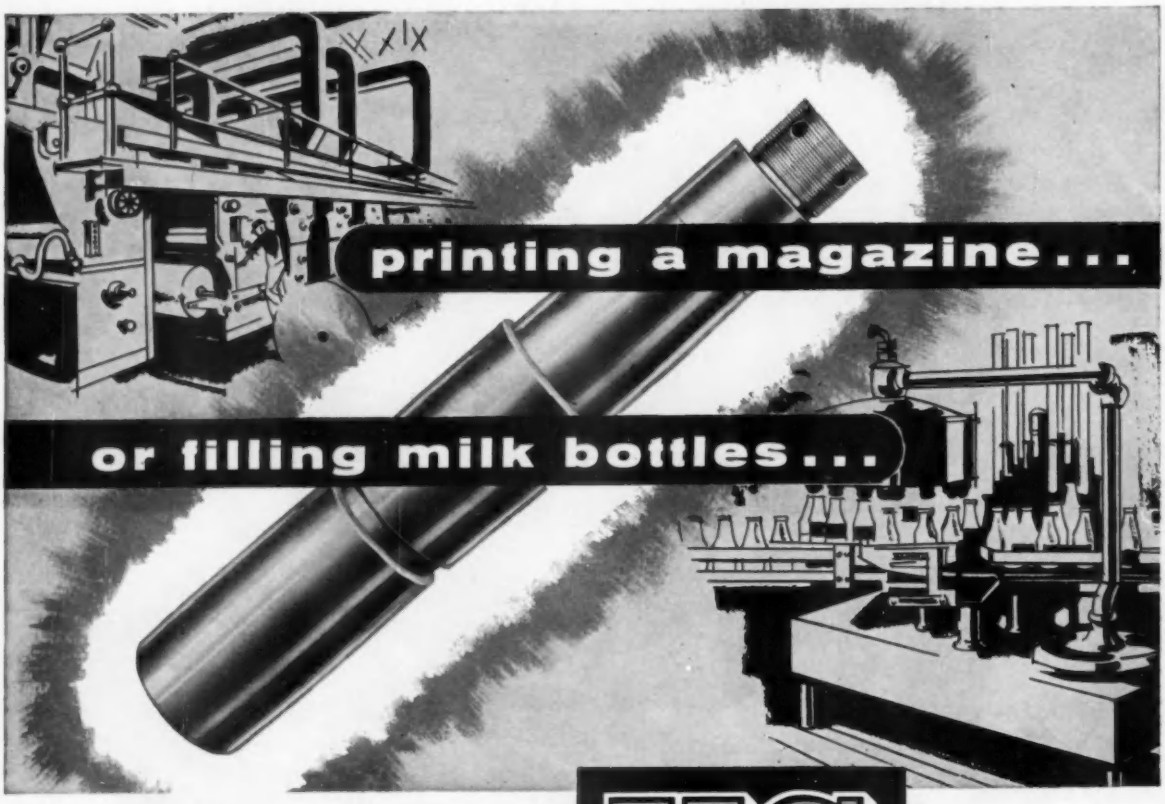
And to everybody, new and used car buyers alike, it's that series of parts that never age . . . never pit, flake or lose their sparkle. In the driveway, it makes a car a showpiece.

Why not let the Crucible engineer help you apply stainless steel profitably? *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor — Railway & Power Engineering Corp., Ltd.



THE WHEELS OF INDUSTRY TURN ON US AXLE SHAFTS

Out in the field and inside the plant, wherever there's work to be done, you'll find labor-saving and time-saving machines. And wherever you find machines, you'll find U.S. Axle Shafts in every size and description, making their contribution toward smooth, trouble-free performance.

U.S. Axle Shafts are made of the finest alloy steel, heat-treated, and then shot-peened — the hardening process that makes U.S. Axles up to 5 times tougher —by actual torsion tests. We will be happy to use our 36 years of engineering skills to help you improve *your* product performance.

Call on U.S. AXLE for shafts for every application

FREE VALUABLE BROCHURE

Shows you why U.S. Axle is your best source for precision-made special shafts.

THE U. S. AXLE COMPANY
Pottstown, Penna.

Please send me the brochure on "U.S. Custom-Engineered Shafts."

Name_____

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"THE WORLD TURNS ON U. S. AXLES"

THE US AXLE COMPANY, INC.
Since 1920 • Pottstown, Pennsylvania

Your own exclusive pattern in

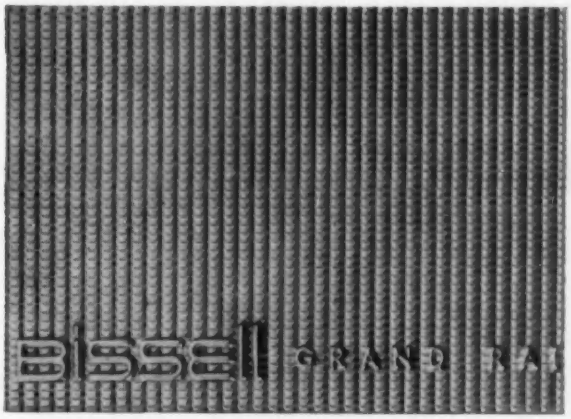
RIGID-tex

metals gives your product

APPEARANCE DISTINCTION

•

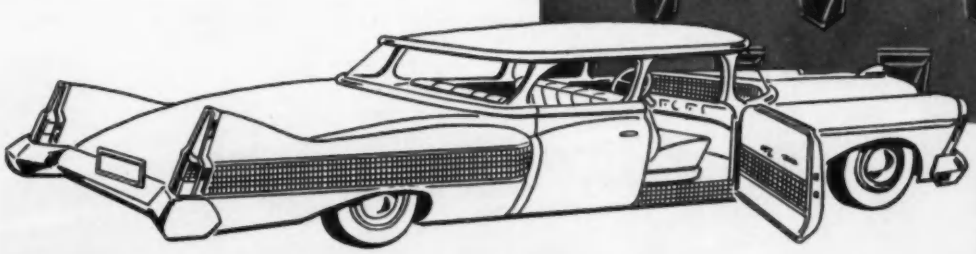
RIGID-tex metal Instrument Panels, Kick Plates, Scuff Plates Side Panels



Above: Special pattern developed from company name.

Above: Special pattern developed from company initials.

Right: Special pattern developed from company trademark.



RIGID-tex METAL IT'S RIGIDIZED®

Designers are invited to write for Pattern Samples and Complete Information.

RIGIDIZED METALS CORPORATION 6713 Ohio St., Buffalo 3, N. Y.

World-wide Distribution

The New Plant of the
OWOSSO MANUFACTURING DIVISION
is a Symbol of the Growth and Progress of
THE MITCHELL-BENTLEY CORPORATION

● The completion of the new plant of the Owosso Manufacturing Division of The Mitchell-Bentley Corporation marks the beginning of a new epoch in the industrial history of Owosso.

This custom designed, strikingly handsome modern plant, encompassing 250,000 square feet of manufacturing space is uniquely equipped to keep pace with the dynamic developments in the everchanging automotive industry.

Here is progress, measured not in terms of steel, brick and stone, but in human terms . . . of men with vision who are giving vibrant reality to a rapidly expanding corporation . . . of people whose skills are fashioning its products . . . and of the community in which this vital force is playing its prominent role.

THE MITCHELL-BENTLEY CORPORATION
OWOSSO MANUFACTURING DIVISION, OWOSSO, MICHIGAN
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The MITCHELL-BENTLEY *Roster*

●
THE LARGEST INDEPENDENT MANUFACTURER OF STATION WAGON BODIES PRODUCING STATION WAGONS FOR BUICK MERCURY OLDSMOBILE
●
DRIVER AND PASSENGER SEATS FOR MILITARY VEHICLES, GENERAL MOTORS, REO, INTERNATIONAL HARVESTER, DIAMOND T, STUDEBAKER, MACK AND DODGE TRUCKS
●
AUTOMOBILE SEATING AND INTERIOR TRIM FOR BUICK, OLDS, MERCURY, STUDEBAKER, DESOTO, CHEVROLET AND DODGE
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TARPAULIN PRODUCTS FOR CIVILIAN AND DEFENSE CONTRACTS
●
BURROUGHS ADDING MACHINE TABLES
●
SPECIAL AUTOMOBILE BODIES
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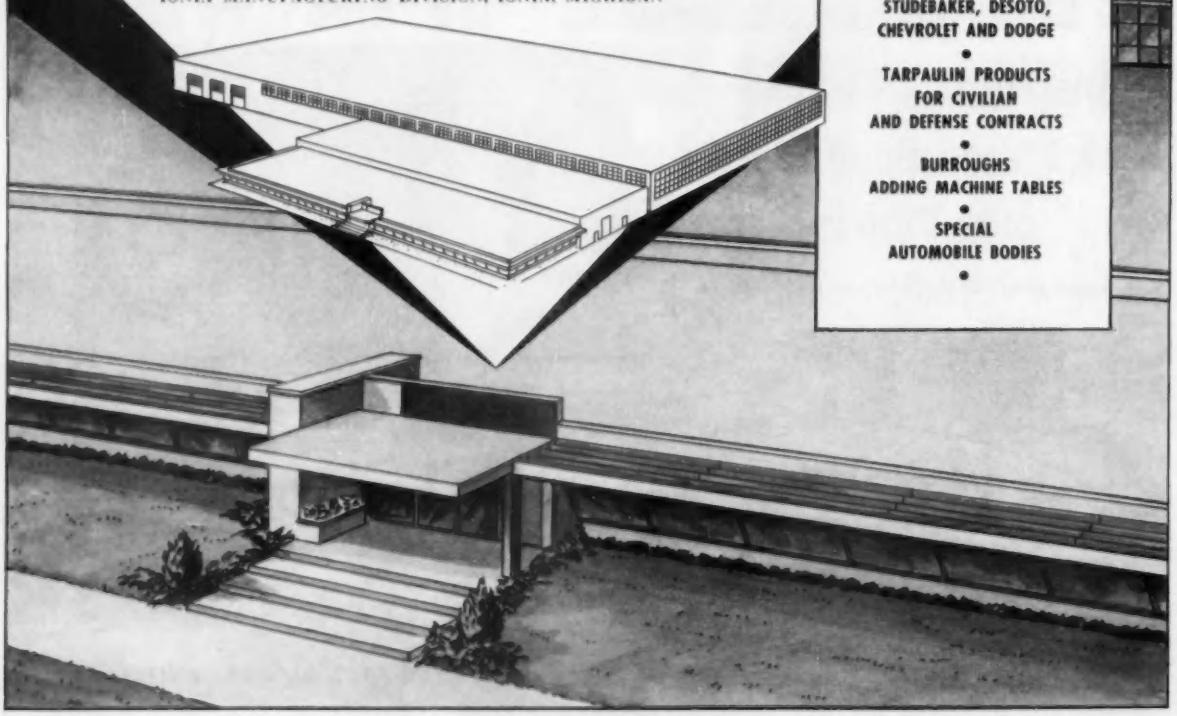
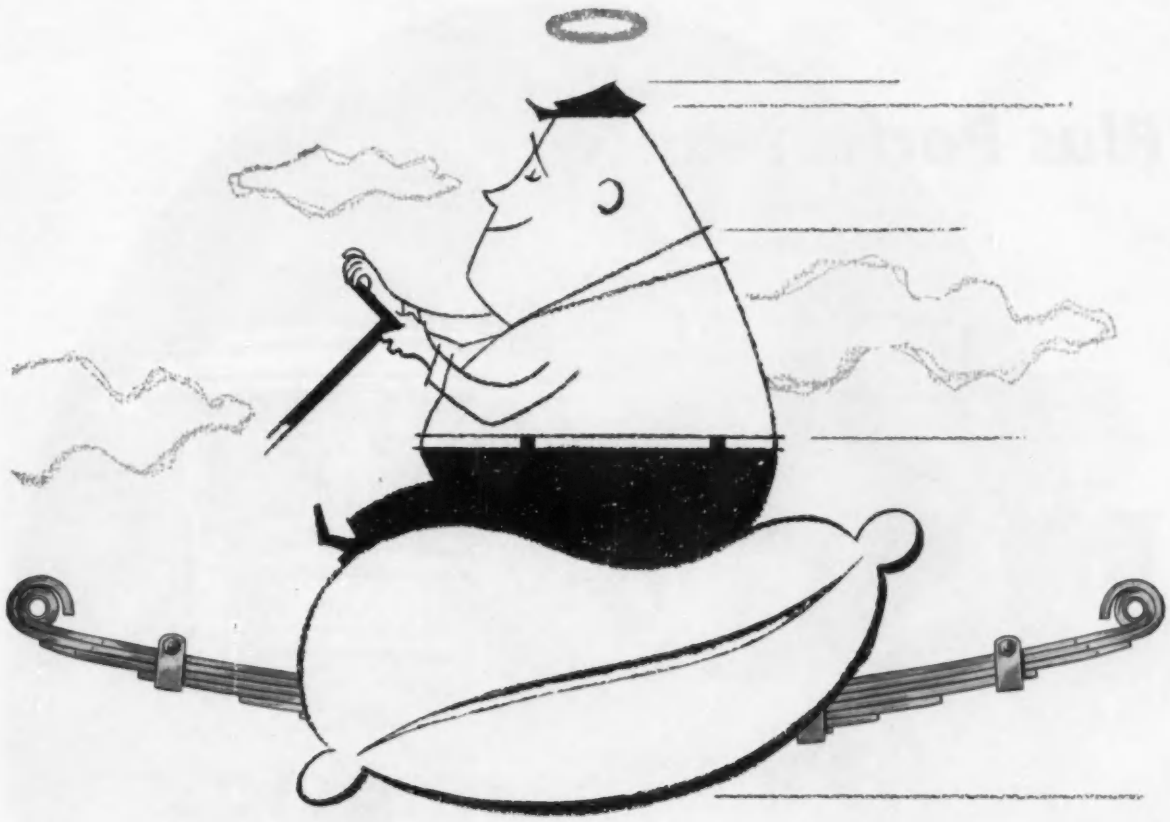




The original ~~CUSHIONED~~ ride*

was developed with LEAF SPRINGS

The "built-in" characteristics of leaf springs include the entire range of flexibility from "soft" to "hard". They can give you exactly the *ride* you want (without addenda), from the ultimate in *softness* to the extreme in rigidity.

The "built-in" features of leaf springs also provide: cushioned impact or thrust of "stops" and "starts"; self alignment of springs, frame, and axles; load balance control; sidesway control; and shock-absorbing action through rebound control.

And the PLUS FACTOR of utmost economy for both manufacturer and customer.

DSP *Leaf* **SPRINGS**

DETROIT STEEL PRODUCTS DIVISION

OF *Fenestra* INCORPORATED

1500 Trombly Avenue, Detroit 11, Michigan

* SINCE 1904—ORIGINAL EQUIPMENT ON CARS, TRUCKS, CABS, BUSES, TRAILERS

Plus Performance

for temperature control of engines with pressurized cooling systems: for today's and tomorrow's cars and trucks

DOLE DV1

DOLE "DV" Thermostats

DOLE DV THERMOSTATS used in leading makes—have proved their dependability and capacity to operate positively against the higher pump pressures in modern sealed cooling systems.

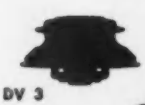
DOLE DV THERMOSTATS are also more efficient for the modern cars with open cooling systems.

In a word, DOLE DV THERMOSTATS help *all* cars of advanced design to give top performance—quick warm-up, savings of gasoline, oil and motor wear. Plus, of course, quick heat from the car heater.

Dole Thermostats are available in various sizes and models to meet all installation requirements.

DOLE DV 1

DOLE DV 2



DOLE DV 3

Control with DOLE — Over 50 Years of Service

CONTROL WITH DOLE

THE DOLE VALVE COMPANY • 1901 Carroll Avenue, Chicago 12, Illinois • Detroit • Los Angeles • Philadelphia

Quality

The quality of an automobile is determined to a great extent by the quality of its component parts.

We are proud of the fact that for over 36 years we have been producers of high quality automobile gasoline tanks that have passed rigid performance tests.

Gasoline Tank for Continental Mark II

O. L. ANDERSON CO.

INCORPORATED

1347-87 EAST FORT STREET · DETROIT 7, MICHIGAN

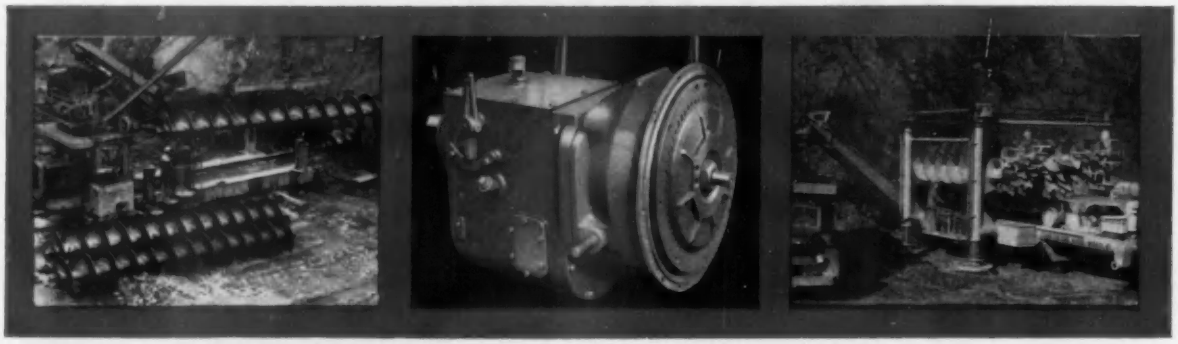
Manufacturers of

Fuel Tanks and Sheet Metal Assemblies for the Automotive Industry

An Assurance of Dependable Service

COTTA
HEAVY-DUTY TRANSMISSIONS

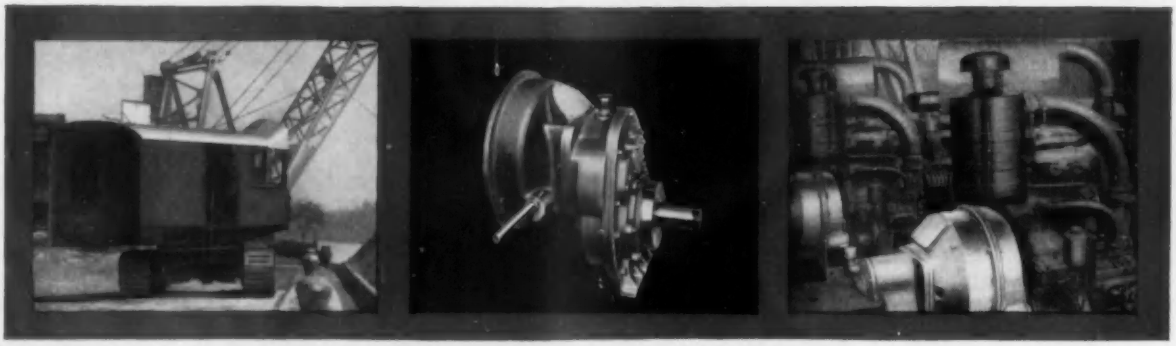
For jobs that ordinary gear-boxes can't handle — heavy-duty loads, continuous day-and-night operation, requiring multi-speeds forward and reverse — come to COTTA for "Engineered-To-Order" Transmissions, custom-designed to fit available space.



An Assurance of Dependable Service

COTTA
HEAVY-DUTY REDUCTION UNITS

Take this low-cost way to adapt higher speeds of new engines to lower rpm required for machine operation. Cotta Reduction Units are available in a broad range of ratios . . . input torque of 150 to 2000 foot pounds — for use on cranes, shovels, pumps, etc.

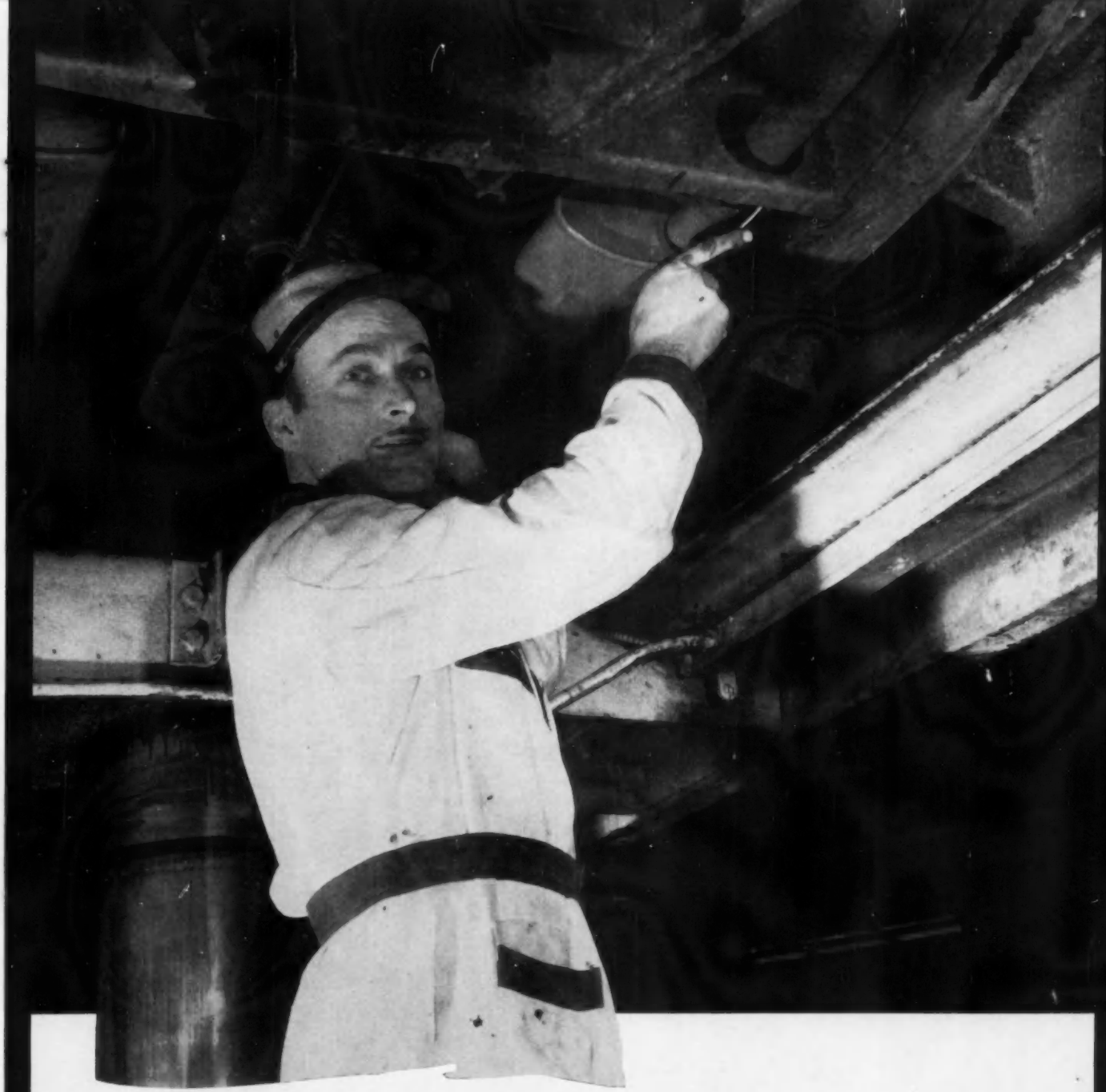


An Assurance of Dependable Service

COTTA
TRANSMISSIONS FOR TORQUE CONVERTERS

Get easier control of power through a wide range of torque and speed conditions on mobile equipment with "Engineered-To-Order" Cotta Transmissions. These specially designed, compact transmissions provide increased efficiency on trucks, railcars, winches, drilling rigs, hoists, and other heavy-duty units.

LET US HELP YOU SOLVE YOUR PROBLEM . . . COTTA TRANSMISSION CO., ROCKFORD, ILL.



"They should make these things of Stainless"

As any motorist knows, exhaust systems on automobiles seem to be the "Achilles Heel" in an otherwise miracle of craftsmanship.

Like the mechanic says, "They should make mufflers and exhaust pipes from Stainless Steel—then they would have something!" And, we might add, something for which the average motorist would gladly pay an extra premium.

High heats for long periods has little deteriorating effect on stainless, and its resistance to the corrosive elements that are a major cause of present day exhaust system failure has long been established.

It seems certain that one day most exhaust systems will be fabricated of stainless steel—and when they are, a good part of the stainless will be from the mills of Sharon—pioneer and prime producer of Stainless Steel for the automotive industry.

SHARONSTEEL

SHARON STEEL CORPORATION

SHARON, PENNSYLVANIA

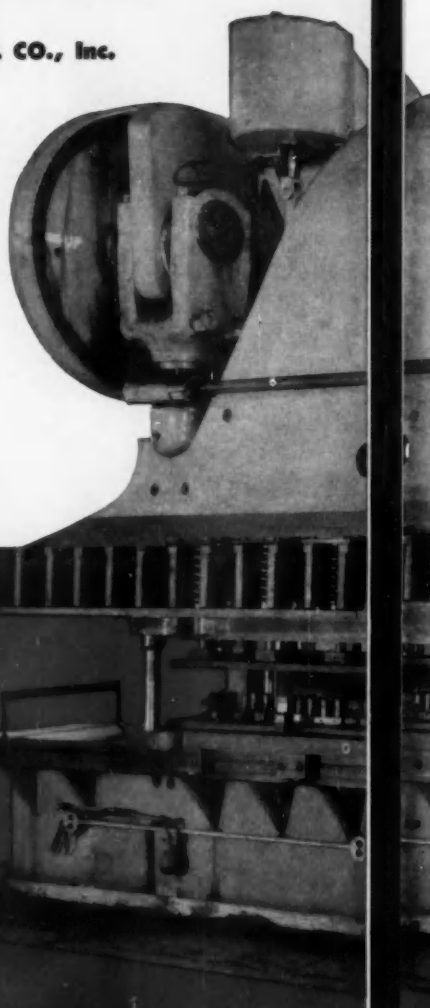
DISTRICT SALES OFFICES: Chicago, Cincinnati, Cleveland, Dayton, Detroit, Grand Rapids, Indianapolis, Los Angeles, Milwaukee, New York, Philadelphia, Rochester, San Francisco, Sharon, Seattle, Montreal, Que., Toronto, Ont.

9980

70 minutes cut

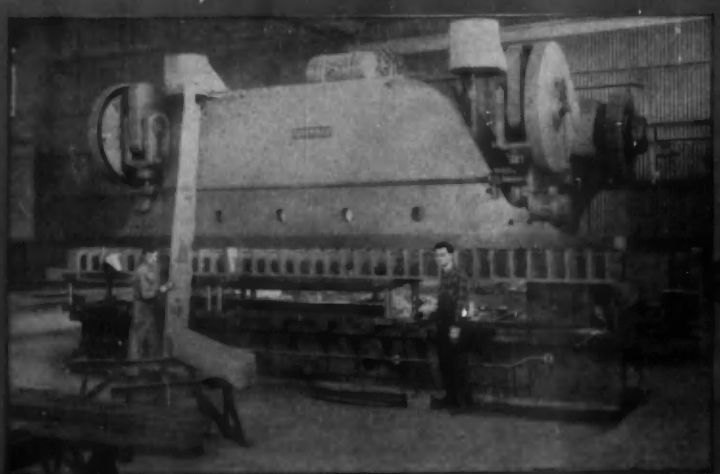
on combined blanking and punching operations!

—FORT WAYNE STRUCTURAL STEEL CO., Inc.
Fort Wayne, Ind.



This versatile Cincinnati All-Steel Press Brake, 34 Series x 16′, has revolutionized the production of these long motor truck side rail reinforcements.

Write **Department W** for Catalog B-4R.
We also suggest you check with our Application Engineering Department on the use of a versatile Cincinnati All-Steel Press Brake in your shop.



(A) Blanking flow to floor time 1½ minutes. Previous time 34 minutes.

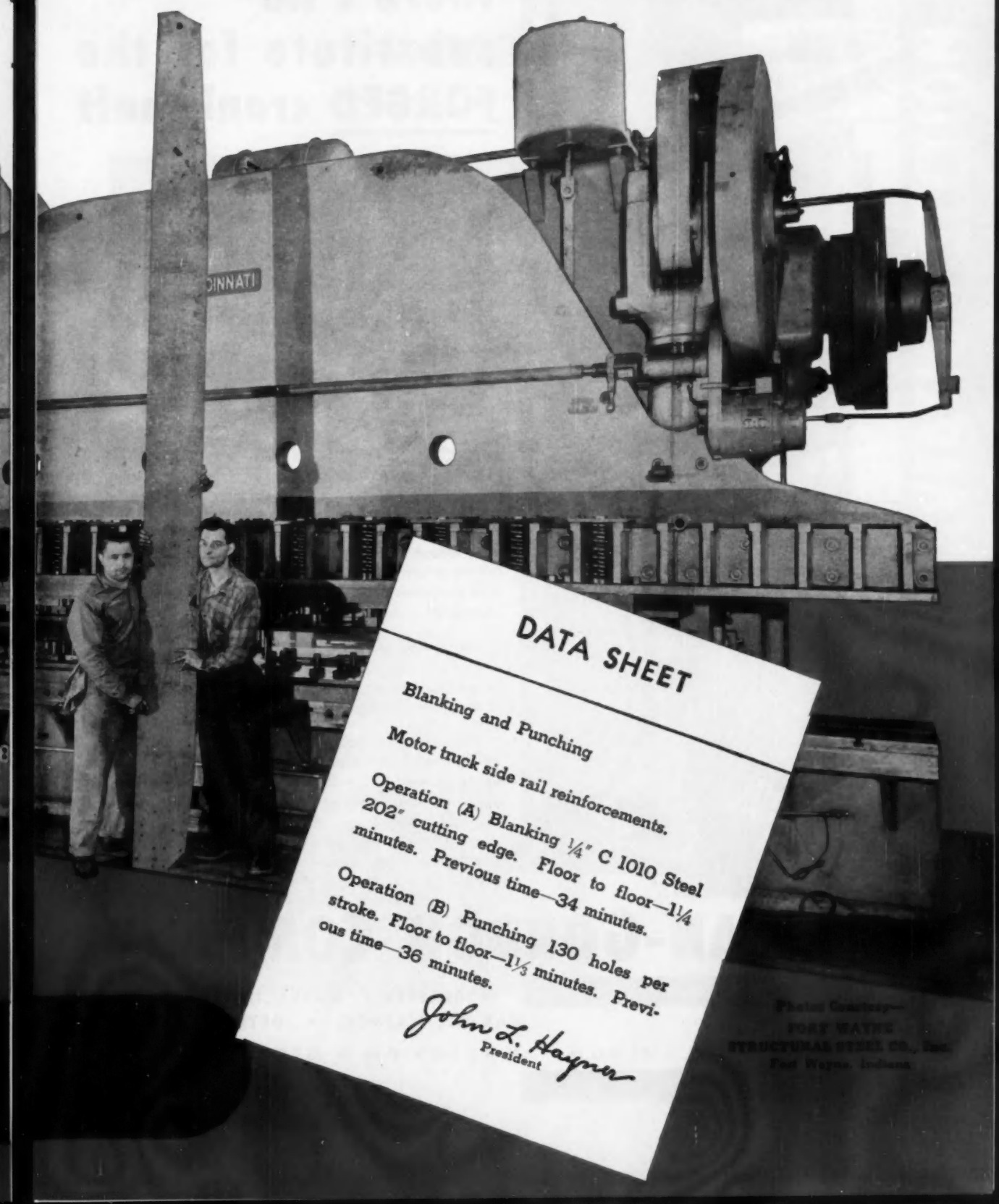
(B) Note Fort Wayne's ingenious punching equipment which reduced punching time from 36 minutes to 1½ minutes and took advantage of every versatile Cincinnati feature.

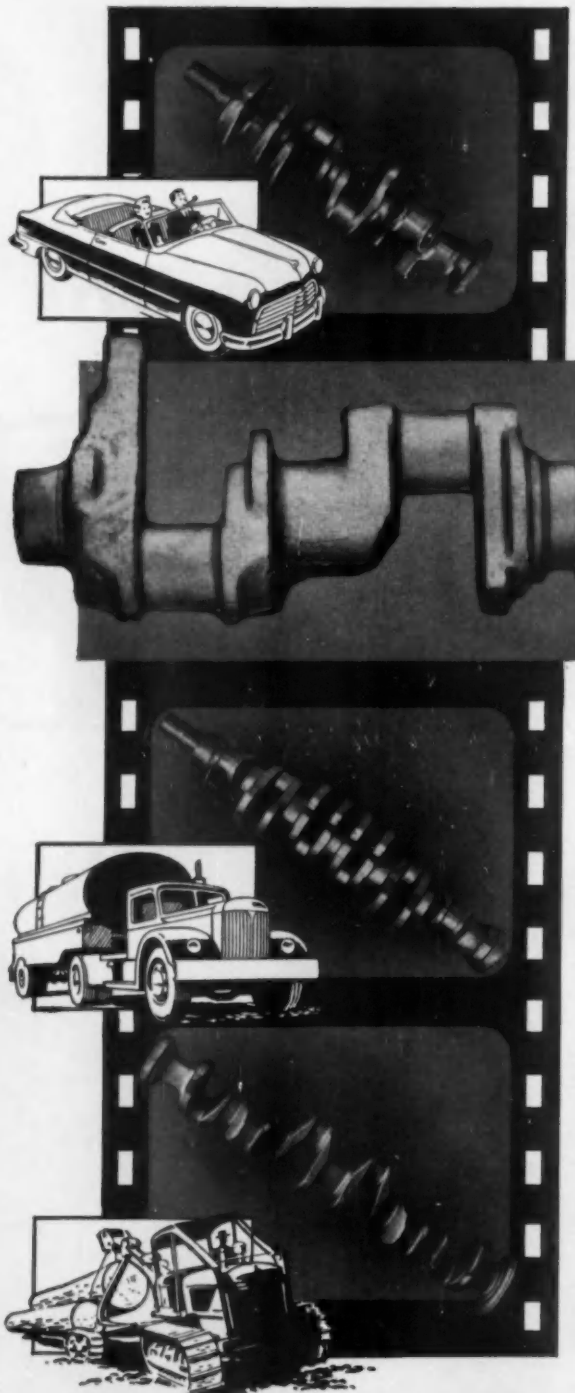
CINCINNATI

THE CINCINNATI SHAPER CO.

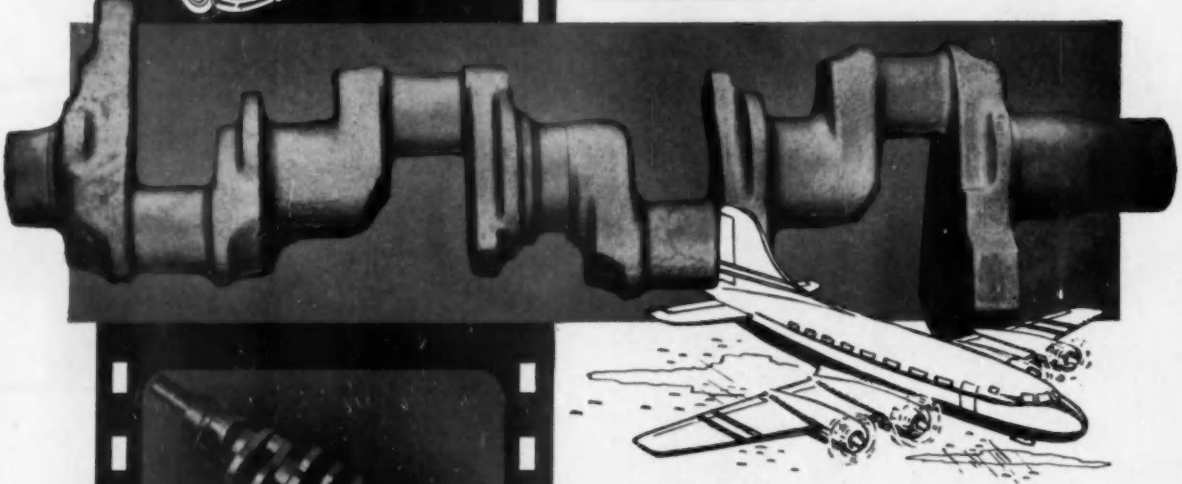
CINCINNATI 25, OHIO, U.S.A. SHAPERS • SHEARS • BRAKES

to 2.6 minutes...


DATA SHEET
Blanking and Punching
Motor truck side rail reinforcements.
Operation (A) Blanking ¼" C 1010 Steel 202" cutting edge. Floor to floor—1¼ minutes. Previous time—34 minutes.
Operation (B) Punching 130 holes per stroke. Floor to floor—1⅓ minutes. Previous time—36 minutes.
John L. Hayner
President



There's no substitute for the FORGED crankshaft



Crankshafts have been made successfully by other methods of fabrication and have proven to be *good enough* for certain non-critical applications—but for maximum dependability of the modern, compact, high compression, high torque engine a forged crankshaft is essential.

The forging process assures, to the greatest degree possible, uniformity and predictability of physical properties with a minimum variance from piece to piece or from one location to another in the same piece.

Wyman-Gordon has been forging crankshafts since the beginning of the internal combustion engine era and today produces more crankshafts for a greater variety of applications than any other company in the world. In a crankshaft there is no substitute for a forging, and in a forging there is no substitute for Wyman-Gordon quality and experience.

WYMAN-GORDON COMPANY

Established 1883

WORCESTER 1, MASSACHUSETTS
HARVEY, ILLINOIS • DETROIT, MICHIGAN

FORGINGS OF ALUMINUM • MAGNESIUM • STEEL • TITANIUM

AVIATION SECTION

AIRCRAFT · AIRCRAFT ENGINES

PRODUCTION

REGISTRATIONS

AIRPORTS
AND LANDING FIELDS

AIR CARRIER
STATISTICS

SPECIFICATIONS

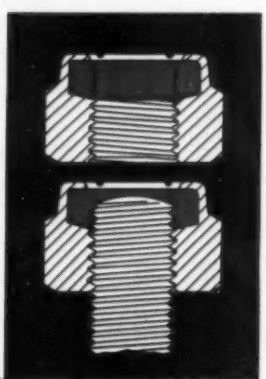
What's special about this STOP NUT?

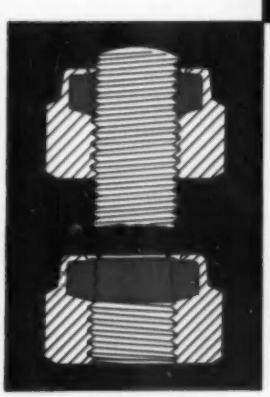
Several things make this nut unusual. For instance, you can "stop" it at any position on the threaded length of the bolt . . . or wrench it tight against the work where it protects bolt threads against corrosion and prevents liquid leakage. No matter where you leave it on the bolt, it will remain tight in that exact position, even though you subject it to heavy vibration and shock loads. But use a wrench on it and it comes off as easily as it went on. The red locking collar is nondestructive—does not gall bolt threads or remove plating. You can remove it and re-use it again and again.

What gives it its grip?

1 The locking collar is unthreaded and elastic. It has an inside diameter smaller than the major diameter of standard bolts.

2 The bolt impresses a mating thread into the collar and the resulting compressive forces exert a constant friction grip on the bolt. . . .





3 and exert a downward thrust bringing the lower flanks of the bolt thread into firm metal to metal contact with the matching nut threads, eliminating normal axial play.

4 Nut is removable and reusable . . . the Red Elastic Collar retains its grip after repeated usage.

Will it hold under ALL conditions?

The locking principle of the Elastic Stop® nut has been tested and proved by over 25 years of actual field service. Elastic Stop nuts are used on locomotives . . . and pile drivers. They fasten hedge shears and harvesters, drilling rigs and washing machines, trucks and roller skates. And no Elastic Stop nut customer has ever stopped using them because of unsatisfactory performance.

What about sizes and materials?

Elastic Stop nuts are available from a watchmaker's 0-80 all the way to 4"—in materials that include stainless steel, brass, aluminum and other alloys. Protect your product with "fastener insurance." Try Elastic Stop nuts on trouble spots, whether to protect expensive heavy equipment from costly downtime or to guarantee the accuracy of delicate electrical equipment by maintaining precision adjustments. We'll supply free test samples.

ESNA® TRADE MARK

ELASTIC STOP NUT CORPORATION OF AMERICA

Dept. NS2-327, 2330 Vauxhall Road, Union, N. J.

Please send the following free fastening information:

☐ ELASTIC STOP nut bulletin

☐ Here is a drawing of our product. What self-locking fastener would you suggest?

Name_____ Title_____

Firm_____

Street_____

City_____ Zone_____ State_____

AVIATION DATA

• SHIPMENTS • REGISTRATIONS • AIR CARRIERS •

Aircraft and Aircraft Engine Production, by Years

As reported by the Civil Aeronautics Administration and Aircraft Industries Association

Year	Aircraft			Aircraft Engines			Value of All Products
	Civil	Military	Total Aircraft	Civil	Military	Total Engines	
1930	2,690	747	3,437	1,925	1,841	3,766	$60,864,000†
1931	1,988	812	2,800	1,976	1,800	3,766	48,540,000†
1932	803	593	1,396	813	1,085	1,898	34,861,000†
1933	858	466	1,324	1,120	860	1,980	33,357,000†
1934	1,178	437	1,615	2,048	688	2,736	43,892,000†
1935	1,251	459	1,710	1,974	991	2,964	42,506,000†
1936	1,869	1,141	3,010	2,433	1,804	4,237	78,149,000†
1937	2,824	949	3,773	4,095	1,989	6,084	114,093,000†
1938	1,823	1,800	3,623	3,800*	N.A.	N.A.	198,293,000†
1939	3,661	2,195	5,856	N.A.	N.A.	11,172	247,905,000
1940	6,785	6,019	12,804	7,500*	22,667	30,167	370,000,000
1941	6,844	19,433	26,277	6,500*	58,181	64,681*	1,804,000,000
1942	N.P.	47,836	47,836	N.P.	138,089	138,089	5,817,000,000
1943	N.P.	85,898	85,898	N.P.	227,116	227,116	12,514,000,000
1944	N.P.	96,318	96,318	N.P.	256,911	256,911	16,047,000,000
1945	2,047	47,714	49,761	2,000*	109,650	111,650	8,279,000,000
1946	35,001	1,669	36,670	40,822	2,585	43,407	629,505,000
1947	15,617	2,100	17,717	16,351	4,808	21,159	1,241,508,000
1948	7,302	2,284	9,586	9,039	N.A.	N.A.	221,638,143‡
1949	3,545	2,544	6,089	3,982	N.A.	N.A.	224,063,865‡
1950	3,520	3,000*	6,520*	4,314	N.A.	N.A.	217,162,000‡
1951	2,477	5,400*	7,877*	4,580	N.A.	N.A.	271,031,000‡
1952	3,509	9,000*	12,509*	5,382	26,000*	31,382*	426,970,000‡
1953	4,134	11,000*	15,134*	6,647	34,500*	41,147*	495,404,000‡
1954	3,389	9,600*	12,989*	5,519	22,000*	27,519*	522,915,000‡
1955	4,820	8,400*	13,220*	7,639	13,000*	20,639*	524,541,000‡
1956	7,205	N.A.	N.A.	11,501	N.A.	N.A.	816,522,000‡

*—Estimated by Aircraft Industries Association. N.P.—No civil production. Military production only. N.A.—Not available. †—Value of aircraft, engines, parts, parachutes, etc., from C.A.A. and Bureau of the Census. ‡—Value of shipments of all products of civil aircraft and civil aircraft engine plants.

Shipments of Complete Civil Aircraft and Parts

In Units and Their Value

As reported by the Bureau of the Census and C.A.A.

Month	Complete Aircraft				Value of Aircraft Parts		Total Value Aircraft and Parts	
	Number		Value					
	1956	1955	1956	1955	1956	1955	1956	1955
January	537	350	$22,053,000	$23,337,000	$9,561,000	$5,450,000	$31,614,000	$28,787,000
February	614	357	31,859,000	26,041,000	8,727,000	7,176,000	40,586,000	33,217,000
March	656	480	29,562,000	27,767,000	10,551,000	8,516,000	40,113,000	36,283,000
April	692	453	30,229,000	17,794,000	10,417,000	10,573,000	40,646,000	28,367,000
May	714	492	35,697,000	31,813,000	9,005,000	8,276,000	44,702,000	40,089,000
June	648	543	40,270,000	34,088,000	8,124,000	8,481,000	48,394,000	42,569,000
July	507	358	32,319,000	28,817,000	8,076,000	8,775,000	40,396,000	37,592,000
August	681	249	46,242,000	24,427,000	10,931,000	8,142,000	57,172,000	32,569,000
September	613	352	41,150,000	18,571,000	9,144,000	9,667,000	50,294,000	28,238,000
October	508	353	50,089,000	17,003,000	11,812,000	9,851,000	61,901,000	26,854,000
November	472	348	51,518,000	7,694,000	10,585,000	10,332,000	62,103,000	18,026,000
December	563	485	42,568,000	13,898,000	12,217,000	8,742,000	54,785,000	22,640,000
Total	7,205	4,820	$453,556,000	$271,250,000	$119,150,000	$103,981,000	$572,706,000	$375,231,000

Shipments of Civil Aircraft Engines and Parts

In Units and Their Value

As reported by the Bureau of the Census and C.A.A.

Month	Civil Aircraft Engines				Value of Engine Parts		Total Value Engine and Parts	
	Number		Value					
	1956	1955	1956	1955	1956	1955	1956	1955
January	930	626	$6,800,000	$5,996,000	$11,572,000	$6,396,000	$18,372,000	$12,392,000
February	976	626	6,923,000	6,115,000	11,286,000	6,132,000	18,209,000	12,247,000
March	1,065	680	7,600,000	6,319,000	11,557,000	6,475,000	19,157,000	12,794,000
April	949	657	7,967,000	5,169,000	11,939,000	6,172,000	19,906,000	11,341,000
May	1,038	704	9,459,000	4,780,000	11,787,000	6,990,000	21,246,000	11,770,000
June	977	706	8,682,000	4,329,000	11,886,000	7,588,000	20,568,000	11,917,000
July	996	522	8,420,000	4,146,000	11,475,000	6,978,000	19,895,000	11,124,000
August	1,038	464	8,036,000	3,177,000	9,592,000	6,150,000	17,628,000	9,327,000
September	793	577	9,938,000	3,807,000	11,575,000	7,495,000	21,513,000	11,302,000
October	901	614	10,677,000	4,285,000	11,478,000	9,017,000	22,155,000	13,302,000
November	911	688	11,391,000	4,677,000	10,551,000	9,026,000	21,942,000	13,703,000
December	927	775	12,370,000	6,347,000	10,855,000	11,694,000	23,225,000	18,041,000
Total	11,501	7,639	$108,263,000	$59,147,000	$135,553,000	$90,113,000	$243,816,000	$149,260,000

For additional Aviation data, see pages 200 and 201

Shipments of Complete U. S. Civilian Aircraft and Engines 1951-1956

Dollars, Horsepower and Weight in Thousands

As reported by the Bureau of the Census and C.A.A.

COMPLETE AIRCRAFT	1956	1955	1954	1953	1952	1951
Total Units	7,205	4,820	3,389	4,134	3,509	2,477
Under 3000 lbs. airframe weight	6,778	4,575	3,098	3,825	3,057	2,279
3000 lbs. airframe weight and over	427	245	291	309	452	198
Total Airframe Weight	16,055.9	10,230.5	10,493.5	10,373.5	9,322.1	4,982.4
Under 3000 lbs. airframe weight	6,624.4	4,535.9	2,963.0	3,076.3	2,416.1	1,779.3
3000 lbs. airframe weight and over	9,431.5	5,694.6	7,530.5	7,297.2	6,906.0	3,203.1
Total Value	$453,556	$271,250	$295,738	$244,418	$197,151	$88,844
Under 3000 lbs. airframe weight	98,364	63,112	41,402	33,388	23,852	14,201
3000 lbs. airframe weight and over	355,192	208,138	254,336	211,030	173,299	74,643
AIRCRAFT ENGINES						
Total Units	11,501	7,639	5,519	6,647	5,382	4,580
Total Horsepower (in thousands)	5,656.6	3,337.4	3,360.4	4,399.2	2,936.4	2,093.8
Total Value (in thousands)	$108,263	$59,147	$60,647	$70,854	$40,722	$25,909

Civil Aircraft Shipments by Total Rated Horsepower

As reported by the Bureau of the Census and C.A.A.

	Under 400 hp		400 hp and Over		Total Aircraft	
Month	1956	1955	1956	1955	1956	1955
January	488	317	49	33	537	350
February	550	309	64	48	614	357
March	590	426	66	54	656	480
April	592	410	100	43	692	453
May	631	440	83	52	714	492
June	573	474	75	69	648	543
July	432	305	84	53	516	358
August	573	197	98	52	671	249
September	533	293	81	59	614	352
October	419	300	89	53	508	353
November	399	309	73	39	472	348
December	502	436	61	49	563	485
Total	6,282	4,216	923	604	7,205	4,820

Civil Aircraft Shipments by Number of Places

As reported by the Bureau of the Census and C.A.A.

	5 Places & Less		Over 5 Places		Total Aircraft	
Month	1956	1955	1956	1955	1956	1955
January	500	318	37	32	537	350
February	565	314	49	43	614	357
March	602	438	54	42	656	480
April	637	417	55	36	692	453
May	653	447	61	45	714	492
June	591	492	57	51	648	543
July	448	323	68	35	516	358
August	600	214	71	35	671	249
September	548	309	66	43	614	352
October	436	320	72	33	508	353
November	411	326	61	22	472	348
December	514	454	49	31	563	485
Total	6,505	4,372	700	448	7,205	4,820

Airframe Weights (Excluding Spares) of Civil Aircraft Shipments

In thousands of Pounds, as reported by Bureau of the Census and C.A.A.

Month	1956	1955	1954	1953	1952	1951	1950	1949
January	985.6	859.2	882.3	868.5	622.9	357.0	530.9	280.6
February	1,266.0	962.9	1,221.3	813.5	761.9	292.7	413.7	774.4
March	1,200.4	1,033.2	877.0	612.8	826.0	316.7	402.5	709.8
April	1,219.6	765.2	1,225.9	755.0	731.3	697.0	442.1	571.4
May	1,354.7	1,142.5	961.0	844.1	955.3	589.0	522.9	451.4
June	1,445.8	1,233.4	1,098.7	901.2	754.8	456.2	573.7	537.7
July	1,155.9	969.7	875.3	975.1	777.7	379.1	467.4	478.4
August	1,576.0	792.1	671.5	781.8	712.9	319.6	552.9	451.4
September	1,371.4	702.4	885.3	899.2	932.0	330.4	523.1	676.0
October	1,568.6	663.0	574.8	782.6	915.8	227.3	335.0	647.2
November	1,520.7	454.3	698.0	1,010.6	777.9	515.8	703.1	527.3
December	1,391.2	652.6	522.4	1,129.1	763.8	630.2	506.9	584.2
Total	16,055.9	10,230.5	10,493.5	10,373.5	9,532.3	5,111.0	5,960.7	6,744.4

Employment in Aircraft and Engine Plants

As reported by the Bureau of Labor Statistics

	Complete Aircraft Plants		Aircraft Engine and Parts Plants	
	1956	1955	1956	1955
January	489,500	472,800	154,300	149,000
February	493,500	477,000	156,800	148,600
March	485,500	477,100	159,000	148,800
April	489,900	478,000	160,200	146,600
May	491,900	476,800	160,400	143,100
June	504,700	476,300	162,400	142,100
July	514,900	481,900	163,600	140,700
August	523,000	482,100	165,200	140,500
September	529,000	485,500	169,600	143,200
October	535,100	488,300	172,700	144,500
November	543,400	492,900	176,100	148,300
December	.....	497,900	.....	151,300
Average	509,127	482,200	163,664	145,600

Total Engine Hp of Civil Aircraft Engine Shipments

In thousands, as reported by Bureau of the Census and C.A.A.

Month	1956	1955	1954	1953	1952
January	380.6	320.7	285.8	267.8	247.9
February	404.0	327.8	336.2	188.8	264.9
March	431.7	340.6	293.2	305.4	253.8
April	431.4	287.8	298.7	378.1	322.6
May	503.5	279.7	298.6	391.2	260.2
June	459.4	258.0	265.3	400.5	270.2
July	444.6	235.4	263.2	400.6	228.6
August	431.9	183.9	248.9	378.4	181.7
September	481.0	228.3	191.9	418.1	271.0
October	535.9	251.3	266.5	463.1	262.8
November	556.6	271.8	284.0	412.6	198.0
December	596.0	352.1	328.1	394.6	174.7
Total	5,636.6	3,337.4	3,360.4	4,399.2	2,936.4

For additional Aviation Data, see pages 200 and 201.

Estimated Miles Flown in General Aviation by Types

This table excludes all aircraft operated by scheduled airlines and by CAA

As reported by the Civil Aeronautics Administration

Year	Total Miles Flown	Business		Commercial[1]		Instructional		Pleasure		Other	
		Miles	Per Cent	Miles	Per Cent	Miles	Per Cent	Miles	Per Cent	Miles	Per Cent
1951....	975,480,000	379,845,000	39	190,480,000	20	190,195,000	19	200,265,000	21	14,695,000	1
1952....	972,055,000	419,705,000	43	217,865,000	22	144,035,000	15	165,795,000	17	24,655,000	3
1953....	1,045,346,000	499,166,000	48	209,937,000	20	120,700,000	11	196,174,000	19	19,369,000	3
1954....	1,119,295,000	552,610,000	49	226,240,000	20	124,290,000	11	209,980,000	19	6,175,000	1
1955....	1,216,000,000	627,800,000	52	245,700,000	20	120,650,000	10	221,850,000	18	.....	..

[1]—Includes contract, charter, industrial and commercial agricultural flying.

U. S. Active Civil Aircraft by Total Rated Take-off Hp

As of January 1, 1956

As reported by the C.A.A.

Number of Engines	Total Rated Hpr	No. of Aircraft
SINGLE ENGINE	1-50	113
	51-100	27,917
	101-200	15,584
	201-350	9,638
	351-500	1,858
	501-700	91
	Over 700	20
	Total	55,221
TWO-ENGINE	1-600	1,555
	601-2,000	1,037
	2,001-4,000	1,121
	Over 4,000	388
	Total	4,101
THREE-ENGINE	1-700	0
	701-1,000	7
	Over 1,000	8
	Total	15
FOUR-ENGINE	1-5,000	11
	5,001-6,000	171
	6,001-10,000	367
	Over 10,000	189
	Total	738

Registered Aircraft and Pilot Certifications

As of Dec. 31	Registered Civil Aircraft	Certified Airplane Pilots			
		Total	Airline Transport	Commercial	Private
1930	9,818	15,280	....	7,847	7,433
1931	10,680	17,739	....	8,513	9,226
1932	10,324	18,594	330	7,967	10,297
1933	9,284	13,960	554	7,635	5,771
1934	8,322	13,949	676	7,484	5,789
1925	9,072	14,805	736	7,362	6,707
1936	9,229	15,952	842	7,288	7,822
1937	10,836	17,681	1,064	6,411	10,206
1938	11,159	22,983	1,159	7,839	13,985
1939	13,772	33,706	1,197	11,677	20,832
1940	17,928	69,829	1,432	18,791	49,607
1941	26,013	129,947	1,587	34,578	93,782
1942	27,170	166,626	2,177	55,760	108,689
1943	27,180	173,206	2,315	63,940	106,951
1944	27,919	183,382	3,046	68,449	111,888
1945	37,789	296,895	5,815	162,873	128,207
1946	81,002	400,061	7,654	203,251	189,156
1947	94,821	433,241	7,059	181,912	244,270
1948	95,997	491,306	7,762	176,845	306,699
1949	92,622	525,174	9,025	187,769	328,380
1950	92,809	N.A.	N.A.	N.A.	N.A.
1951	88,545	580,574	10,813	197,900	371,861
1952	89,313	581,218	11,357	193,575	376,286
1953	91,102	585,974	12,757	195,363	377,854
1954	92,067	613,695	13,341	201,441	398,913
1955	85,320	643,201	13,700	211,142	418,359

General Statistics for the Aircraft Industry, by Regions and States

As reported by the Industry Division, Bureau of the Census.

Region and State	1954 Establishments, Number	1954 All Employees Number	1954 All Employees Payroll ($1,000)	1954 Production Workers Number	1954 Production Workers Wages ($1,000)	1954 Value Added by Manufacture ($1,000)	1954 Cost of Materials, etc. ($1,000)	1954 Value of Work Done ($1,000)	1954 Capital Expenditures, New ($1,000)	1947 All Employees, Number	1947 Value Added by Manufacture ($1,000)
New England	4	6,083	$28,711	3,786	$16,140	$42,316	$30,850	$73,166	(d)	8,193	(d)
Middle Atlantic	14	56,546	305,763	40,684	200,186	483,795	367,275	851,070	(d)	(d)	(d)
New York	10	51,004	278,736	36,998	184,867	440,796	325,983	766,779	$5,240	13,968	$55,536
North Central	9	74,170	348,561	52,748	238,572	530,987	671,350	1,202,337	2,315	12,923	59,365
Kansas	5	44,996	209,209	32,829	152,128	296,659	550,957	847,616	872	(d)	(d)
South	18	100,556	480,608	73,692	317,558	654,455	565,118	1,219,573	17,010	29,489	114,698
Maryland	4	27,016	125,598	19,996	83,871	195,529	155,303	350,832	(d)	16,184	(d)
Texas	7	41,148	204,147	30,279	136,907	255,303	134,609	389,912	6,585	12,944	(d)
West	29	220,260	1,113,674	149,532	669,174	1,737,320	1,283,675	3,020,995	34,212	80,008	341,474
Total—United States	72	457,618	$2,277,319	320,445	$1,441,632	$3,448,876	$2,918,271	$6,367,147	$59,445	146,625	$605,983

(d)—Withheld to avoid disclosing figures for individual companies.

General Statistics for the Aircraft Engines Industry, by Regions and States

As reported by the Industry Division, Bureau of the Census.

Region and State	Establishments, Number	All Employees Number	All Employees Payroll ($1,000)	Production Workers Number	Production Workers Wages ($1,000	Value Added by Manufacture ($1,000)	Cost of materials, etc. ($1,000)	Value of Shipments ($1,000)	Capital Expenditures, New ($1,000)	All Employees, Number	Value Added by Manufacture ($1,000)
New England	43	44,859	$211,706	34,804	$152,012	$325,219	$339,329	$664,549	$10,977	18,605	(d)
Massachusetts	14	5,594	28,355	4,015	19,121	52,098	44,277	96,375	1,939	4,655	(d)
Connecticut	25	38,897	181,940	30,462	131,798	270,518	293,481	564,000	8,970	13,950	(d)
Middle Atlantic	54	41,595	198,021	28,415	121,659	348,797	363,304	712,102	4,405	10,649	(d)
Pennsylvania	19	12,117	55,903	8,734	36,842	95,901	49,758	145,660	1,328	2,024	(d)
North Central	111	75,893	384,066	50,856	234,907	722,587	1,032,329	1,754,977	24,092	19,260	94,303
Ohio	31	29,699	145,013	19,022	84,915	283,764	379,217	663,043	9,044	8,580	(d)
Indiana	21	15,623	81,264	10,195	48,274	147,533	262,031	409,565	9,357	8,915	(d)
Illinois	11	14,007	73,205	9,318	42,829	105,515	253,008	358,523	1,975	(d)	(d)
Michigan	42	7,892	44,938	6,068	31,806	85,086	62,609	147,695	1,835	451	2,374
South and West	26	5,034	25,387	3,199	14,269	38,839	18,481	57,321	7,214	1,809	11,185
California	22	4,246	22,148	2,876	13,226	35,337	17,816	53,153	977	1,809	11,185
Total—United States	234	167,382	$819,180	177,276	$522,849	$1,435,443	$1,753,445	$3,188,950	$46,688	50,423	252,254

(d)—Withheld to avoid disclosing figures for individual companies.

U. S. Active Civil Aircraft Registrations, by Type and State

As of January 1, 1956

As reported by the Civil Aeronautics Administration

State	Total Active Aircraft	Air Carrier Scheduled and Irregular	General Aviation: Multi-engine	General Aviation: Postwar 4 and 5 place single engine	General Aviation: All Other
Alabama	468	12	17	160	279
Arizona	780	5	23	305	447
Arkansas	680	0	15	188	477
California	6,766	115	325	2,148	4,178
Colorado	852	39	32	302	488
Connecticut	469	0	38	164	267
Delaware	156	3	19	55	79
Dist. of Columbia	331	66	87	62	116
Florida	1,442	78	96	368	900
Georgia	766	60	21	220	465
Idaho	631	0	14	219	398
Illinois	3,487	187	170	1,266	1,864
Indiana	1,834	8	82	639	1,105
Iowa	1,629	0	30	532	1,067
Kansas	1,641	0	66	687	888
Kentucky	455	0	25	180	250
Louisiana	863	5	82	247	529
Maine	314	0	2	87	225
Maryland	551	0	30	149	372
Massachusetts	877	21	41	258	557
Michigan	2,625	2	166	924	1,533
Minnesota	1,675	63	47	452	1,113
Mississippi	559	0	12	115	432
Missouri	1,498	180	52	435	831
Montana	868	1	21	265	581
Nebraska	1,231	0	23	362	846
Nevada	307	11	27	106	163
New Hampshire	135	0	9	31	95
New Jersey	1,199	14	74	378	733
New Mexico	538	0	27	238	269
New York	2,969	499	252	687	1,531
North Carolina	1,055	17	53	295	690
North Dakota	625	0	2	104	519
Ohio	2,904	3	230	989	1,682
Oklahoma	1,311	0	141	457	713
Oregon	1,176	2	42	420	712
Pennsylvania	2,413	1	179	804	1,429
Rhode Island	133	0	6	45	82
South Carolina	361	0	10	97	254
South Dakota	769	0	2	168	599
Tennessee	585	5	28	203	349
Texas	4,703	103	483	1,713	2,404
Utah	355	0	14	129	212
Vermont	90	0	3	25	62
Virginia	687	7	31	174	475
Washington	1,587	19	34	447	1,087
West Virginia	336	0	12	97	227
Wisconsin	1,255	0	59	355	841
Wyoming	360	0	12	132	216
Total	59,297	1,517	3,266	18,883	35,631

U. S. Civil and Military Airports by Types*

As of January 1, 1956

As reported by the Civil Aeronautics Administration

State	Total	Public	Limited†	Paved Airports: Lighted	Paved Airports: Not Lighted
Alabama	73	28	45	18	7
Arizona	155	43	112	16	19
Arkansas	81	40	41	15	3
California	462	199	263	82	81
Colorado	118	41	77	11	5
Connecticut	39	18	21	6	2
Delaware	20	9	11	2	2
Dist. of Columbia	1	1	...	1	...
Florida	143	88	55	41	33
Georgia	106	42	64	27	12
Idaho	150	38	112	10	5
Illinois	383	131	252	31	10
Indiana	130	83	47	17	6
Iowa	183	80	103	15	...
Kansas	231	82	149	27	12
Kentucky	49	19	30	9	5
Louisiana	99	30	69	13	7
Maine	105	23	82	12	10
Maryland	44	23	21	7	7
Massachusetts	83	49	34	17	9
Michigan	252	99	153	32	5
Minnesota	224	67	157	23	2
Mississippi	82	32	50	17	5
Missouri	115	55	60	19	8
Montana	167	55	112	15	2
Nebraska	200	72	128	17	7
Nevada	81	27	54	15	7
New Hampshire	35	15	20	8	...
New Jersey	111	53	58	9	4
New Mexico	102	36	66	17	13
New York	272	107	165	31	6
North Carolina	109	55	54	18	8
North Dakota	172	36	136	9	1
Ohio	242	117	125	20	7
Oklahoma	143	63	80	29	11
Oregon	148	50	98	20	13
Pennsylvania	230	133	97	23	11
Rhode Island	9	6	3	4	1
South Carolina	62	32	30	12	6
South Dakota	73	32	41	9	1
Tennessee	56	32	24	19	3
Texas	630	190	440	83	53
Utah	56	26	30	11	8
Vermont	25	8	17	3	1
Virginia	89	45	44	8	12
Washington	184	69	115	25	11
West Virginia	49	26	23	9	2
Wisconsin	194	80	114	18	4
Wyoming	72	28	44	11	1
Total	6,839	2,713	4,126	902	449

*—Definitions of airports are as follows: Public—all airport that serve scheduled and large irregular air carriers as regular, alternate and provisional stops; all C.A.A. intermediate landing fields; all airports having a true-light certificate to indicate a lighted airport, and all other airports which are operationally active. Limited—all airports that do not qualify as "Public-Use" airports.

†—Includes seaplane bases and heliports.

CAA Operated Traffic Control Towers Ranked in Order of Air Carrier Operations

As reported by the Civil Aeronautics Administration

C.A.A. Tower	Rank Order 1955	Rank Order 1954	Air Carrier Operations 1955	Air Carrier Operations 1954
Chicago, Ill. (Midway)	1	1	321,882	283,219
New York, N. Y. (La Guardia)	2	2	210,999	188,604
Washington, D. C.	3	3	187,689	168,400
Los Angeles, Calif.	4	4	156,797	148,519
Miami, Fla.	5	6	137,083	126,213
San Francisco, Calif.	6	5	135,788	131,138
New York, N. Y. (Idlewild)	7	7	125,665	111,463
Detroit, Mich. (Willow Run)	8	10	120,424	105,380
Dallas, Tex.	9	8	115,400	107,897
Cleveland, Ohio	10	9	112,965	106,677
Newark, N. J.	11	13	107,329	88,507
Atlanta, Ga.	12	11	106,668	99,834
Pittsburgh, Pa. (Greater)	13	12	104,992	98,772
Boston, Mass.	14	16	92,821	83,690
Kansas City, Mo.	15	15	86,947	85,185
St. Louis, Mo.	16	18	83,904	80,486
Philadelphia, Pa.	17	14	82,929	88,088
Oakland, Calif.	18	17	75,184	81,802
Burbank, Calif.	19	19	69,511	67,163
Minneapolis, Minn.	20	25	69,283	59,516
Louisville, Ky. (Standiford)	21	20	66,923	66,526
Covington, Ky.	22	24	65,642	60,351
Indianapolis, Ind.	23	21	63,378	62,539
Denver, Colo.	24	23	63,200	60,664

Scheduled Air Carrier Operation Statistics

As reported by the Civil Aeronautics Board

Number of Operators, Aircraft in Service, Route Mileage and Speed

	DOMESTIC LINES					INTERNATIONAL LINES				
	Operators	Aircraft in Service	Average Number of Seats	Route Mileage Operated	Average Speed (mph)	Operators	Aircraft in Service	Route Mileage Operated	Average Length of Pass. Trip	Average Speed (mph)
1941	19	370	17.54	45,163	N.A.	3	53	N.A.	713	N.A.
1942	19	186	17.91	41,596	N.A.	3	68	N.A.	880	N.A.
1943	19	204	18.34	42,537	N.A.	3	70	27,211	874	N.A.
1944	19	288	19.05	47,384	155.6	3	70	29,708	910	149.2
1945	20	421	19.68	48,516	155.4	4	97	38,885	942	150.7
1946	24	674	25.25	53,981	160.2	9	147	66,419	1,051	166.3
1947	28	810	29.93	62,216	168.2	12	154	95,503	1,332	191.1
1948	31	878	32.37	68,702	171.9	13	175	105,853	1,376	195.5
1949	37	913	35.03	72,667	179.0	13	177	109,011	1,351	207.1
1950	38	960	37.47	77,440	181.2	12	160	106,401	1,316	218.4
1951	38	981	39.55	78,913	184.6	12	140	108,763	1,273	223.5
1952	35	1,078	42.71	77,894	190.8	13	149	110,465	1,277	226.8
1953	32	1,139	46.07	78,384	197.8	14	161	111,826	1,354	229.9
1954	32	1,175	50.06	78,294	205.8	15	161	112,488	1,314	242.1
1955	31	1,212	51.62	78,992	209.0	15	147	114,005	1,294	245.4

N.A.—Not available.

Scheduled Air Carrier Operating Revenues—Domestic Lines

Year	Total Revenues	Passenger Dollars	Passenger % of Total	Mail Dollars	Mail % of Total	Express & Freight Dollars	Express & Freight % of Total	Excess Baggage Dollars	Excess Baggage % of Total	Other Dollars	Other % of Total
1941	$97,311,134	$69,791,338	71.7	$22,696,351	23.3	$2,919,003	3.0	$765,424	0.8	$1,139,018	1.2
1942	108,248,830	74,819,050	69.1	23,470,088	21.7	6,977,943	6.4	1,259,774	1.2	1,721,975	1.6
1943	123,104,965	87,481,456	71.0	24,212,580	19.7	8,381,539	6.8	1,720,142	1.4	1,309,248	1.1
1944	160,928,192	116,440,690	72.3	33,317,366	20.7	8,306,288	5.2	2,030,444	1.3	833,404	0.5
1945	214,743,090	166,519,922	77.5	33,693,467	15.7	10,835,138	5.0	2,298,241	1.1	1,396,322	0.7
1946	316,232,793	275,593,712	87.2	20,981,542	6.6	13,620,295	4.3	2,992,795	0.9	3,044,449	1.0
1947	364,839,575	308,575,954	84.6	29,444,746	8.1	19,377,949	5.3	3,572,104	1.0	3,868,822	1.0
1948	434,295,282	343,289,730	79.0	59,309,343	13.7	24,372,395	5.6	3,953,310	0.9	3,370,605	0.8
1949	486,033,845	388,930,412	80.0	59,332,991	12.2	27,986,856	5.8	4,452,334	0.9	5,331,220	1.1
1950	557,162,340	443,852,000	79.7	63,772,233	11.4	35,109,399	6.3	5,068,238	0.9	9,360,461	1.1
1951	702,364,506	591,186,365	84.2	57,421,687	8.2	36,914,107	5.2	6,069,313	0.9	10,773,018	1.5
1952	817,680,000	695,456,000	85.1	58,887,000	7.2	42,828,000	5.2	7,348,000	0.9	13,152,000	1.6
1953	927,482,000	803,869,000	85.8	64,484,000	6.9	47,791,000	5.1	8,704,000	0.9	12,422,000	1.3
1954	1,042,793,000	905,840,000	86.9	65,726,000	6.3	49,901,000	4.8	10,632,000	1.0	10,680,000	1.0
1955	1,201,058,000	1,060,588,000	88.3	55,327,000	4.6	61,112,000	5.1	12,168,000	1.0	11,859,000	1.0

Personnel Employed—Domestic Scheduled Air Carriers

	Pilots and Copilots	Other Flight Personnel	Pursers, Stewards, Stewardesses	Meteorologists and Dispatchers	Mechanics	Hanger and Field Personnel	Office Employees	All Other Personnel	Total Employees
1941	2,217	19	1,028	220	4,423	2,224	7,807	1,285	19,223
1942	2,194	112	753	1,581	9,348	2,969	7,717	2,236	26,910
1943	2,125	8	845	1,685	8,271	3,356	10,973	2,391	29,654
1944	2,879	11	1,322	1,870	7,136	3,509	12,201	2,270	31,198
1945	4,967	108	2,075	2,613	10,844	7,012	19,241	3,453	50,313
1946	5,712	98	3,342	3,577	16,107	10,307	24,626	5,413	69,182
1947	5,034	181	3,061	2,618	15,366	8,409	22,012	2,317	58,998
1948	5,307	312	3,038	2,612	16,428	9,222	21,396	2,101	60,416
1949	5,257	642	3,199	2,497	15,674	9,236	21,136	2,145	59,886
1950	5,785	776	3,372	2,450	15,788	9,822	21,894	2,016	61,903
1951	6,688	1,012	4,106	2,617	18,908	11,475	25,770	2,322	72,898
1952	7,209	1,141	4,640	2,666	20,972	12,388	27,939	2,731	79,687
1953	7,726	1,365	4,954	2,665	20,717	14,249	30,193	2,782	84,651
1954	7,803	1,624	5,141	2,419	20,108	14,575	30,436	2,659	84,765
1955	8,710	1,721	5,919	2,544	23,747	15,855	34,129	2,841	95,466

Personnel, Payroll and Average Salary—1955

	DOMESTIC LINES			INTERNATIONAL LINES		
Type of Employee	Personnel	Annual Payroll	Av. Annual Salary	Personnel	Annual Payroll	Av. Annual Salary
Pilots and Copilots	8,709.5	$99,078,901	$11,375.96	2,136	$26,906,063	$12,596
Other Flight Personnel	1,721.0	13,219,006	7,681.00	1,041	10,043,435	9,648
Stewards, Stewardesses, Pursers	5,918.5	19,334,981	3,266.87	1,535	6,265,158	4,082
Dispatchers, Comm. Operators, Meteorologists	2,544.0	13,432,713	5,280.15	950	3,814,026	4,013
Mechanics	23,746.5	126,833,662	5,341.15	5,420	27,573,439	5,087
Other Hangar and Field Personnel	15,855.5	72,662,280	4,582.78	3,242	11,083,417	3,419
Office Employees	34,129.5	149,525,989	4,381.14	10,883	41,626,379	3,825
All Other Employees	2,841.0	12,381,303	4.358.1	1,448	5,692,897	3,932
Total	95,465.5	$506,468,835	$5,305.21	26,665	$133,004,814	$4,990

1957 / U.S. AND FOREIGN MILITARY AIRCRAFT

MAKE AND MODEL	POPULAR NAME	Type	Number of Crew	ENGINE: Make and Model	ENGINE: Number Used	ENGINE: Total Take-off Hp. at Specified RPM	ENGINE: Total Take-off Thrust at Specified RPM	Fuel Capacity (Gallons)	Oil Capacity (Gallons)	DIMENSIONS (Ft. & In.): Span	DIMENSIONS (Ft. & In.): Overall Length	DIMENSIONS (Ft. & In.): Height (Taxi Position)	DIMENSIONS (Ft. & In.): Wing Area (Gross) Sq. Ft.	DIMENSIONS (Ft. & In.): Aileron Area (Sq. Ft.)	WEIGHTS (Lb.): Empty	WEIGHTS (Lb.): Useful Load	WEIGHTS (Lb.): Gross	WEIGHTS (Lb.): Pay Load	PERFORMANCE: Maximum Speed at Altitude	PERFORMANCE: Cruising Speed at Altitude	PERFORMANCE: Range in Miles at Cruising Speed	PERFORMANCE: Initial Climb (Feet per Minute)	PERFORMANCE: Service Ceiling with Normal Load (Feet)
UNITED STATES																								
Aero Commander	L-26B	Commander	PCL	1	Lyco	GO-480-D1A	2	550–	N	158	10	44'¼"	35'5"	14'9"	242.5	20.5	4181	1819	6000		206–SL	190–10000	990	1400	21900
	L-26C	Commander	PCL	1	Lyco	C-SO-480-A1A-6	2	680–	N	223	10	44'¼"	35'5"	14'9"	242.5	20.5	4340	2060	7000		260–10000	230–10000	1380	1600	24200
Beech	45	Mentor T-34A	T	2	Cont	O-470-13	1	225–2600	N	50	3	32'10"	25'11"	9'7"	177.6	11.5	2170	730	2900		189–SL	173–10000	736	1230	20000
	45	Mentor T-34B	T	2	Cont	O-470-13A	1	225–2600	N	50	3	32'10"	25'11"	9'7"	177.6	11.5	2246	729	2875		189–SL	173–10000	735	1160	20000
	50	Twin Bonanza L-23B	Tr,T	6	Lyco	GO-435-C2	2	490–3400	N	134	6	45'3½"	31'6½"	11'4"	277.1	13.9	4015	1985	6000		178–2500	167–10000	835	1450	20000
Boeing	B-52	Stratofortress	HB	6	P&W	J-57	8	N	80000–			185'0"	156'0"	48'0"					400000*		650*–		6000*		50000*
	KC-135	Stratotanker	Ta	2–3	P&W	J-57	4	N	40000–			130'10"	136'3"	38'8"					190000		550*–	550–	3000*		42000*
Cessna	L-19D	Bird Dog	OR,IT	1	Cont	O-470-15	1	213–2600	N	42	2½	36'0"	25'0"	7'6"	174.0	18.3	1700	700	2400			129–5000	330	1100	18500
	OE-2	N			Cont	O-470-2	1	265–2600	N	51	3	36'0"	25'2"	7'6"	174.0		1835	815	2650	471	161–10000	132–5000	500		22350
	T-37A	N	T	2	Cont	J-69-T9	2	N	1840–22700	317		33'9 11/32"	27'7 5/8"	9'4 21/32"	183.9	11.4	3911		6451		339–35000	301–35000	705		33000
Chance Vought	F8U-1	Crusader	F	1	P&W	J-57	1	N																	
Convair	R3Y		Ta	7	All	XT-46-A-10	4	22000–	N			145'9"	139'8"	51'5"					160000		350*–				
	C-131D		Tr		P&W	R-2800-CB-16	2	4800–	N	1730		105'4"	79'2"	28'1 1/2"	920.0	43.8			47000		255–16000	247–20000	1570	1410	24500
	R4Y-1		Tr		P&W	R-2800-52W	1	2400–	N	1730		105'4"	79'2"	28'2"	920.0	43.8	30684		47000		255–16000	234–16000	1575	1220	23400
	TF-102A		T		P&W	J-57-P-23	1	N				38'1 3/32"	63'4 1/4"	18'2"											
	F-102A		I	1	P&W	J-57-P-23	1	N				38'1 3/32"	68'3 1/2"	18'2"											
	XB-58	Hustler	B	3	GE	J-79	4	N				55'0"	95'0"	30'0"											
Douglas	AD	Skyraiders	A	1–2–3	Wr	R-3350-26W	1	2700–	N			50'0"	38'10"	15'7"	400.0		10519	5546	16065						
	F4D	Skyray	F	1	P&W	J-57		N																	
	A4D	Skyhawk	AB	1	Wr	J-65	1	N																	
	B-66	Destroyer	B	3	All	J-71	2	N				72'6"	75'2"	23'7"					70000		600*–				
	RB-66	Destroyer	RB	3	All	J-71	2	N				72'6"	75'2"	23'7"					70000		600*–				
	C-133		Tr		P&W	T-34	4						152'7 1/2"	48'3"	2673.1	143.3	109417	145583	255000	46800					
	F6D	Skylancer	F		P&W	J-57	1	N																	
Fairchild	C-119G	Flying Boxcar	TC	5	Wr	R-3350-85	2	7000–2900	N	2590	120	109'3"	86'6"	26'3"	14/7.0	110.8	39920	34000	77000	29400	280–10000	200–10000	2080	1200	20600
	C-123B	Provider	TC	2	P&W	R-2800-99W	2	5000–2800	N	2362	96	110'0"	76'3"	34'1"	1223.2	63.3	31197	28803	60000	20000	252–13000	180–5000	2650	1400	23000
Grumman	SA-16A	Albatross	H,R,C,Tr,P	6	Wr	R-1820-76A	2	2850–2700	N	675	58	80'0"	61'0"	24'3"	833.0		20100		2/025		270–18800	225–	2700	1400	
	F9F-8	Cougar	F	1	P&W	J-48	1	N				34'6"	41'7"	12'3"							650*–				
	S2F-1	Tracker	Sub,A	4	Wr	R-1820	2	2750–	N																
	F11F-1	Tiger	F	1	Wr	J-65-W-7	1	N				31'7"	40'10"	12'8"											
Lockheed	T-33		T		All	J-33	1	N		663[1]		39'0"	38'0"	12'0"	238.0				15000		600–				45000
	RC-121, WV-2	Super Constellation	Re		Wr	R-3350-34	4		N			123'0"	116'2"	27'0"	1650.0				145000		270*–				
	C-130	Hercules	Tr		All	T-56	4	N				132'6"	95'0"	38'0"					108000						
	P2V-7	Neptune	P,M,TB			(a)	4		7800–			103'0"	91'5"	29'4"	1000.0[2]		47450		75500		300–				22000
	F-104B	Starfighter	F	2	GE	J-79	1	N				21'11"	54'9"	13'8"											
	C-121F, R7V-2	Super Constellation	PCL		P&W	T-34	4	22000–			8750[1]	117'0"	116'2"	24'6"	1615.0	98.6			150000	36000		440–			35000
	F-104A	Starfighter	F	1	GE	J-79	1	N				21'11"	54'9"	13'8"											
	T2V-1	Sea Star	T		All	J-33	1	N		760		42'0"	38'0"	13'0"					16400		600–		900		
Martin	P5M-2	Marlin	AS	7	Wr	R-3350-32W	2	6500*–	N			118'0"	98'11"	33'0"	1406.0				70000*		250–		2500		
	B-57B		B	2	Wr	J-65	2	N	14400*			64'0"	65'5"	16'0"					50000*		600*–		2000*		45000*
	P6M-1	Sea Master	M	5	All	J-71	4	N				100'0"	134'0"	31'0"	1900.0						600*–				40000*
McDonnell	F-101A	Voodoo	F,BE	1	P&W	J-57	2	N	20000*–			39'8"	67'5"	18'0"											
	RF-101A	Voodoo	PR	1	P&W	J-57	2	N	20000*–			39'8"	67'5"	18'0"											
	F-101B	Voodoo	I	2	P&W	J-57	2	N	20000*–			39'8"	67'5"	18'0"											
	F3H-2N	Demon	F	1	All	J-71	1	N	10000*–												600*–				
	F3H-1N	Demon	F	1	West	J-40	1	N				26'4"	59'0"	14'4"											

North American	F-86D	Sabre	I	1	GE	J-47	1	N	7650–			37'1"	41'8"	15'0"					18000		650*–		1000		45000*
	F-86F	Sabre	F	1	GE	J-47	1	N	5970–			37'0"	3[illegible]'8"	14'0"					17000		650*–		1000		45000*
	F-86H	Sabre	FB	1	GE	J-73	1	N	9000–			37'1"	38'8"	15'0"							650*–		1200		45000*
	F-100A	Super Sabre	F	1	P&W	J-57-P7	1	N	10000–			38'0"	41'8"	15'0"							725–		1000		50000*
	T-28B		T	2	Wr	R-1820	1	1425–	N			40'6"	32'8"	12'6"			6000		8000		346–	310–3000u	1080		37000
	F-86K	Sabre	F	1	GE	J-47-33	1	N	8600*–			37'1"	42'4"	15'0"					18500		650*–				45000*
	FJ-3	Fury	F	1	Wr	J-65	1	N	7200*–			37'1"	37'7"	13'8"					18000*		650*–				45000*
	FJ-4	Fury	F	1	Wr	J-65-W4	1	N	7800*–			39'1"	37'6"	12'3"					19000*		690*–				45000*
	F-100C	Super Sabre	F	1	P&W	J-57-P7	1	N	10000*–			38'0"	47'0"	15'0"							822*–		1000*		50000*
	T-28C	N	T	2	Wr	R-1820	1	1425–	N			40'6"	34'3"	12'6"					8247		346–		860		35000
	F-100D	Super Sabre	FB	1	P&W	J-57	1	N	10000–			38'0"	47'0"	16'0"							822*–		1000		50000*
Northrop	F-89D	Scorpion	I	2	All	J-35A-35	2	N				56'2"	53'4"	17'7"	606.0				40000*		600*–		1900*		45000*
	F-89H, F-89J	Scorpion	I	2																					
Piper	L-21B	Grasshopper		2	Lyco	O-290-D2	1	135–	N	36	2	35'3"	22'8"	6'7"	178.5	18.8	1000	400	1620	620	127–SL	110–SL	500	1200	20000
Republic	F-84F	Thunderstreak	FB	1	Wr	J-65	1	N	7200–			33'6"	43'4"	14'4"					25000		650*–		2000*		45000*
	RF-84F	Thunderflash	RF	1	Wr	J-65	1	N	7200–			33'6"	47'8"	15'0"							650*–		2000*		45000*
	F-105	Thunderchief	FB	1																					
Temco	51		T	2	Cont	J-69-T-9	1	N	920–	124	2	29'10"	30'0"	10'10"	150.0	10.0	3139		4400		294–15000	234–22350	239	1900	30000
AUSTRALIA																									
de Havilland	DH-115, Mk-33	Vampire	T	2	DH	Goblin 35	1	N	3500–10750	396	1½	38'0"	34'8"	6'3"	261.0	7.7			11150		549–20000	408–40000	850	4500	40000
BELGIUM																									
S.A.B.C.A.	F-Mk-4, 83	Hunter	F	1	RR	Avon	1	N				33'8 1/16"	45'10 11/16"	13'1 11/16"	340.0										
GREAT BRITAIN																									
Auster	A.O.P. Mk-9		OL	2–3	Bl	Bombardier	1	180–	N	18	3	36'5"	23'8½"	8'11"	197.6		1460		2100		127–1000	110–1000	245	920	14000
		Aiglet	T	2	DH	Gypsy Major	1	130–	N	16	3	32'0"	23'2½"	8'5"	169.5	16.0	1323	877	2200		132–1000	107–1000	270	650	12500
AVRO	698	Vulcan	B		Br	Olympus	4	N	44000–			99'0"	9'1"	26'6"											
	696	Shackleton H.R. 3	RB	10	RR	Griffon	4		N			120'6"	87'4"	23'4"											
Blackburn		Beverley	Tr	4	Br	Centaurus 173	4	11400–2800	N	8260	254	162'0"	99'5"	38'9"	2916.0	168.0	82100	52900	135000	45000	236–7500	223–5000	3700	760	15750
Bristol	170	Freighter	Tr		Br	Hercules 730	2	3960–	N	1405	64	108'0"	68'4"	21'6"	1487.0	54.3	27946	16054	44000	12967	193–10000	164–5000	2500	1400	22500
	171	Sycamore	H	1	Av	Leonides	1	525–	N	107	7	48'6¾"	61'0"	14'7"			3983	1417	5200		141–	90–	368	1300	15500
	173		H		Av	Leonides 73	2	1100–	N			48'6¾"	78'2"						10600		158–SL				
de Havilland	DH-115	Vampire	T	2	DH	Goblin 35	1	N	3500–10750	396	1½	38'0"	34'8"	6'3"	261.0	7.7			11150		549–20000	408–40000	850	4500	40000
	DH-112	Venom	FB	1	DH	Ghost	1	N	4850–10250			41'9"	31'10"	6'3"											
	DH-110		NF	2	RR	Avon	2	N				51'0"	53'6½"												
	DH-112	Venom, Sea Venom	NF	2	DH	Ghost	1	N	4850–10250			41'9"	35'3"												
English Electric	B-2	Canberra	MB	3	RR	Avon	2	N	13000–7800			64'0"	65'6"	15'7"											
	B-6	Canberra	B	3	RR	Avon	2	N	13000–7800			64'0"	65'6"	15'7"											
	B-8	Canberra	AB	2	RR	Avon	2	N	13000–7800			64'0"	65'6"	15'7"											
	PR-3, PR-7	Canberra	P	2	RR	Avon	2	N	13000–7800			64'0"	66'8"	15'7"											
	T-4	Canberra	T	3	RR	Avon	2	N	13000–7800			64'0"	65'6"	15'7"											
	P-1		F	1	ArS	Sapphire	2	N																	
	PR-9	Canberra	P	2	RR	Avon	2	N				68'0"	68'8"	15'7"											
Fairey	T-7, AS-7	Firefly	AS,T	3	RR	Griffon 5801	1	1965–	N			44'6"	38'3"		342.5		11016		13870			257–13500	860	1550	25500
	AS-1	Gannet	AS	3	ArS	Double Mamba 100	1	N	2950–			54'4"	43'0"								300*–				
	5	Firefly	AS,R	2	RR	Griffon 74	1	2020–	N			41'2"	37'11"		330.0		9948		13927		386–14000		760		33500
	FD-2		Re		RR	Avon	1	N				26'10"	52'7½"												
	4	Gannet	AS	3	ArS	Double Mamba 101	1	N				54'4"	43'0"												
	T-2	Gannet	T	2	ArS	Double Mamba 100	1	N				54'4"	43'0"												
	(Hellcopter)	Rotodyne	Tr	2	Nap	Eland EC7	2	N	7000–12500			46'6"	58'8"	22'2"	475.0		25000	14000	39000	11000		160–3000	400	1670	12000
	(Hellcopter)	Ultralight	O,T	1	Bl	Palouste	1	N				28'3½"	15'0"	6'2"			985	915	1900	700	108–1000	85–1000	170	1600	16000
Folland	FO-141	Gnat	F	1	Br	Orpheus	1	N	4850–			22'2"	30'0"	8'6"	137.0	11.0									50000
Gloster	T-3	Javelin	T	2	ArS	Sapphire	2	N	16600–			52'0"	60'2"	17'1"											
		Javelin	F	2	ArS	Sapphire	2	N	16600–			52'0"	57'0"	17'1"											
Handley Page	HP-80	Victor	B		ArS	Sapphire	4	N				110'0"	114'11"	26'9"											
Hawker		Sea Hawk	I		RR	Nene 4	1	N	5000–18500			39'0"	40'0"	8'9"	278.0										
	F-Mk. 1, 4, 6	Hunter	F	1	RR	Avon	1	N				33'8 1/16"	45'10 11/16"	13'1 11/16"	340.0										
	F-Mk. 2, 5	Hunter	F	1	ArS	Sapphire	1	N				33'8 1/16"	45'10 11/16"	13'1 11/16"	340.0										
	T-7	Hunter	F	2	RR	Avon	1	N				33'8 1/16"	48'10 1/16"	13'2 11/16"	340.0										

For abbreviations see page 243

For Directory of the Aircraft Manufacturers listed above, see Table of Contents

U. S. AND FOREIGN MILITARY AIRCRAFT—*concluded*

MAKE AND MODEL	POPULAR NAME	Type	Number of Crew	ENGINE				Fuel Capacity (Gallons)	Oil Capacity (Gallons)	DIMENSIONS (Ft. & In.)					WEIGHTS (Lb.)				PERFORMANCE				
				Make and Model	Number Used	Total Take-off Hp. at Specified RPM	Total Take-off Thrust at Specified RPM			Span	Overall Length	Height (Taxi Position)	Wing Area (Gross) Sq. Ft.	Aileron Area (Sq. Ft.)	Empty	Useful Load	Gross	Pay Load	Maximum Speed at Altitude	Cruising Speed at Altitude	Range in Miles at Cruising Speed	Initial Climb (Feet per Minute)	Service Ceiling with Normal Load (Feet)
GREAT BRITAIN—*cont'd*																							
Hunting Percival	T-Mk. 1 Provost	T	2	Av Leonides	1	550–3000	N	78	6	35'2"	29'8"	8'10"	214.0	24.2	3311	989	4300		201–2300	177–11500	633	2100	22500
	P-66 Pembroke	Tr	2	Av Leonides	2	1100–3000	N	286	25	64'6"	46'0"	16'1"	400.0	50.2			13000		220–1800	206–	1160	1500	22000
	P-84 Jet Provost	T	2	ArS Viper V-8	1	N	1750–13800	197		35'2"	31'11"	10'2"	213.7	18.7			5850		287–30000		570	2530	
Saunders Roe (Helicopter)																							
	Mk. 6 Skeeter		2	DH Gypsy Major 201	1	200–2600	N	23	3	32'0"					1626		2150		101–	99–	206	1020	11700
Scottish Aviation																							
	Twin Pioneer	Tr	1	Av Leonides 503/6	2	1080–3000	N	347	10¾	78'8"	45'1"	11'7"	670.0	44.0	9397	4653	14000	3008	167–1500	139–5000	1170	880	23000
	Pioneer 2	Tr		Av Leonides	1	540–3000	N	72	5½	49'9"	34'4"	10'1"	380.0	32.5			5800		145–1500				
Short	SB-6 Seamew	AS	2	ArS Mamba	1	1640–	320–	420	3½	55'8"	41'0"	13'5"	585.0	45.4	9400	5600	15000	1900	232–	138–5000	650	1150	22000
Vickers-Armstrongs	Mk. B-1 Valiant	MB		RR Avon	4	N				114'4"	108'3"	32'2"											
	Mk. FR-5 Supermarine Swift	FR	1	RR Avon	1	N				32'4"	41'8"	12'3"	320.2										
	N-113	F	1	RR Avon	2	N				37'0"	56'0"	17'8"											
Westland	Mk. 4 Wyvern	F	1	ArS Python	1	3650–	N	526	9	44'0"	42'3"	16'9"	356.0	49.0	15608	9892	24500	5803					
	S-51 Dragonfly	H	1	Av Leonides	1	520–3000	N	53	6	48'0"	46'0"	13'0"			4547	1353	5900	523	103–SL	80–SL	300	970	10500
	S-55 Whirlwind	H	2	Av Leonides Major	1	750–2900	N	145	10	53'0"	41'8½"	16'3"			5626	2174	7800	924	104–SL	86–SL	420	1100	15000
	(Helicopter) Widgeon		1	Av Leonides 521/1	1	520–3000	N	53	6	49'0"	41'3"	12'11"			4525	1375	5900	545	103–SL	80–SL	300	970	10500
CANADA																							
de Havilland	DHC-1 Chipmunk	T	2	DH Gypsy Major 8	1	145–2550	N	22	3	34'4"	25'5"	7'0"	172.5	13.9	1425		2100		138–SL	119–SL	275	840	15800
	L-20A Beaver	L,Am,C,P	1	P&W R-985-AN6B	1	450–2300	N	95	6¼	48'0"	30'4"	9'0"	250.0	24.6	2960	2140	5100		163–5000	143–5000	650	1020	18000
	DHC-3 Otter	C,L,Tr,Am,P	1	P&W R-1340-S1H1-G	1	600–2250	N	216	10¾	58'0"	41'10"	12'7"	375.0	26.3	4379	3821	8000		160–5000	139–5000	1008	1000	19000
FINLAND																							
Valmet Oy	VH-2 Vihuri	T	2	Br Mercury 8	1	720–2600	N	166	10	34'1"	28'9"	12'8"	202.9	15.7	4700		5692		270–12000	204–3300	660	2263	29200
	VH-3 Vihuri	T	2	Br Mercury 8	1	720–2600	N	166	10	34'1"	28'9"	12'8"	202.9	15.7	4800		6300		270–12000	204–3300	660	2263	29200
FRANCE																							
Breguet	940 Integral	Tr		Tur	4	N				58'4"	40'0"						14300			240–			
	Deux Ponts	Tr		P&W R-2800-C	4	10000–	N			140'0"	95'0"		1997.0				113800			250–	2000		
Dassault	4-A Mystere	I	1	HS Verdon	1	N	7700–			43'8"	50'6"	17'4"			12518		16314		746–	597–		10820	45000
	Mirage Delta	I	1	Own MD30 Viper	2	N	3520–																
	SMB-2 Super Mystere	F	1	Sn Atar 101G1T1Y1	1	N	9960–	570		34'5"	46'0"	15'4"	372.5	32.0	15100		19750		750–SL	600–40000		17000	50000
	6 Etendard	F	1	Br Orpheus	1	N	4850–	440		27'0"	39'0"	12'0"	226.0		7250		10700		–36000				
	2 Etendard	F	1	Tur	2	N	2410–																
	4 Etendard	F	1	Sn Atar	1	N	7700–																
Fouga	CM-170R Magister	T	2		2	N	1764–			37'0"	33'0"	9'0"	186.0		4268		6970		444–20000			2925	34000
Holste	MH-1521 Broussard	H,L,Tr,PR	1	P&W R-985	1	450–	N			45'0"	28'2"		271.0		3263		5954		224–	168–	745		
Morane-Saulnier	MS-733 Alcyon	T,L	3	Pot 6D-02-A	1	230–2350	N	630	4	37'0"	30'7"	11'4"	236.0	21.8	2830	990	3856		162–SL	143–3300	570	730	15300
	MS-735	T	3	Pot 6-D-30	1	310–2400	N	65	3¾	37'0"	31'1½"	11'4"	235.0	21.8	2840	1005	3845		175–5900	152–6600	600	830	19000
	MS-755 Fleuret	T	2	Tur Marbore 2	2	N	1764–22600	180	5½	31'4"	31'10"	9'0"	194.0	24.8	4300	1650	5950		440–19700	285–23000	470	3350	36000
	MS-760 Paris	L,T	1	Tur Marbore 2	2	N	1764–22600	360	3½	33'3"	32'11"	8'8"	194.0	21.0	4290	3210	7500		405–20000	350–16400	930	2300	34000
	MS-475	T	2	HS	1	860–	N			41'11"	35'6"	14'2"	186.0	15.2	5181		6680		310–13000	260–13000	600	2120	33400
	MS-500 Criquet	OL,Am		Ar	1	240–	N	89	4¾	46'9"	31'9"	12'6"			2264		3276		92–SL	76–	435		
Ouest Aviation	SO-4050 Vautour	A,FB,NF	1–2	Sn Atar 101E-3	2	N	15540–			50'0"	55'0"	15'0"					35000		700*–	680–	3700	3000	49200

	(Helicopter) SO-1221	Djinn	H	1	Cont	Palouste	1	N	250–	57	10	36'0"	17'5"	8'7"			795	970	1765	620	80–	62–	170	1470	14090
	SO-9050	Trident II	I	1	Tur	Gabizo	2[4]	N	11600–			22'0"	43'0"	10'0"	155.0				11400							
Potez	75	Blinde	A,O	2	Own	8D30	1	500–	N			51'5"	36'0"	10'6"			4078	1653	5137		171–	143–	435	1898	
S.N.C.A.N.	2501	Noratlas	Tr	3	Br	Hercules	2	4180–	13400–	1345	75½	106'7½"	72'1½"	19'8"	1088.9	42.8	27210	18500	46305	13300	221–10000	173–10000	1590	1073	22100
	NC-856	Norvigie	AO	1–2	Sn	Regnier 4L00	1	140–	N	29	7½	47'4"	30'4"	8'8"	181.0	17.3	1433	880	1984	710	118–	105–	1243	1181	19600
	1405	Gerfaut II	I	1	Sn	Atar F	1	N	8300–	465		22'0"	33'0"	13'9"					11500						
	1500	Griffon I	I	1	Sn	Atar F	1	N	8300–			26'0"	51'9"	16'3"					13800						
Sud-Est Aviation		Aquilon	F	1–2	DH	Ghost	1	N	4850–			42'9"	36'9"	8'10"	280.0		10400	4500	14900		600–		1040		40000
	SE-5000	Baroudeur	A	1	Sn	Atar	1	N	6200–	462		32'10"	44'3"	11'10"	272.0		10300		15100		680–			7380	49000
	(Helicopter) SE-3130	Alouette II	H	1	Tur	Artouste II	1	N	400–33000			33'0"	31'9"	9'0"			1700	1300	3000		113–SL	106–	320	1180	14800
		Durandal	I																						
	(Helicopter) S-58				Wr	R-1820-211	1	1525–2800	N	220	12¼	56'0"					7530	5070	12600		132–SL	104–	270	1590	9600
ITALY																									
Aer Macchi	MB-323		T	2	P&W	R-1340	1	610–2250	N	108	9¼	39'4½"	30'0"	13'3"	217.0	23.0	4409	1301	5710		210–5900	173–13100	1180	1437	21325
	MB-326		T	2	ArS	Viper AS-V8	1	N	1750–13000	230	2½	32'10"	39'3½"	11'3"	209.5	19.2	3809	2149	5953		449–29500	329–29527	715	3051	32809
Fiat	G-46-2B		T	2	DH	Gypsy Queen 30	1	245–2500	N	42	7¼	34'1½"	27'10"	7'10½"	172.2	11.0	2450	700	3150		204–SL	171–10000	700	1060	20000
	G-46-4B		T	2	AR	115 ter Mk-1950	1	222–2400	N	42	7¼	34'1½"	27'10"	7'10½"	172.2	11.0	2425	720	3145		194–SL	164–4300	560	1025	17500
	G-59-4A		T	1	RR	T-24-2 Merlin	1	1400–3000	N	127	9½	38'10½"	31'1"	12'1"	227.0	14.3	6180	1450	7630		380–21000	303–18500	620	3500	39700
	C-59-4B		T	2	RR	T-24-2 Merlin	1	1400–3000	N	100	9½	38'10½"	31'1"	12'1"	227.0	14.3	6285	1180	7465		380–21000	303–18500	500	3500	39700
	F-86-K		F	1	GE	J47GE17/B	1	N	7350–			37'2"	40'11"	15'0"	287.9				18000		650–		500		45000+
	Mk-52	Vampire	F	1	DH	Goblin 3	1	N	3300–	395		38'0"	30'8"	6'2"	270.0		6835	3815	10650		480–15000		750		45600
	G-49-1		T	2	Av	Lecnides502/4Mk24	1	570–3000	N	90		40'11"	31'5"	9'1"	255.0		4700	1255	5955		225–3300	185–13100	1500	1060	24000
	G-49-2		T	2	P&W	R-1340-S3H1	1	600–2250	N	90		40'11"	30'10"	9'0"	255.0		4700	1255	5955		230–5000	185–13100	1300	1300	24000
	G-49-3		T	2	IA	19E1 Indio	1	620–2250	N	90		40'11"	30'10"	8'9"	255.0		4665	1255	5920		230–5000	185–13100	1375	1300	24000
	G-80-3B		T	2	DH	Goblin 35	1	N	3500–10750	405		38'1"	42'5"	13'2½"	270.6	14.3	9500	3300	12800		515–10000	342–30000	620	2420	36000
	G-91		F	1	Br	Orpheus 3	1	N																	
	G-82		T	2	RR	Nene RN6/21	1	N	5400–12700	466		38'9½"	42'5"	13'4½"	270.6		9700	4080	13780		575–10000	360–30000	715	6100	42650
	G-91-S		F	1	Br	Orpheus 11	1	N																	
	G-91-T		T	2	Br	Orpheus 4	1	N																	
Piaggio	P-148MT		T	2	Lyco	O-435-A	1	190–2550	N	45	3	36'5"	27'7"	7'10"	200.0	16.4	1931	715	2646		174–SL	127–3000	570	900	18045
	P-150		T	2	P&W	R-1340-53H1	1	600–2250	N	148	14½	42'4"	30'4¼"	9'2½"	271.3	22.0	4277	1323	5600		228–5900	190–9700	690	1380	22100
	P-149D		T,L	1	Lyco	GO-480-B	1	270–3400	N	63	3	36'6"	28'2"	9'7"	203.0	16.4	2550	1150	3700	700	190–SL	165–7500	620	1100	15500
SPAIN																									
A.I.S.A.	AVD-12	Dewoitine	LReAmOP	1	Enm	Tigre G-IV-B	1	150–2300	N	44	2	36'2"	25'5"	6'11"	194.0	22.6	1590	840	2430		140–SL	130–6560	560	850	17700
	1-115		T	2	Enm	Tigre G-IV-B	1	150–2300	N	35	2½	31'3"	24'1"	6'10"	150.7	12.8	1500	683	2183	N	142–SL	121–SL	500	731	14000
	AVD-12C	Dewoitine-Cont.	L,D,Am,P	1	Cont	O-470-A	1	225–2800	N	44	1¾	36'2"	25'4"	6'9"	194.0	22.6	1668	1200	2868		173–SL	166–6560	622	1180	21000
Hispano	HA-100-E1	Triana	T	2	Eliz	B-4	1	775–2200	N	159	7	34'1"	27'9"	11'0"	186.7	15.6	4343	1470	6460		280–9500	237–9500	821	2130	33600
	HA-100-F1		T	2	Wr	957C7BA1	1	800–2600	N	159	9½	34'1"	27'9"	11'0"	186.7	15.6	4510	1470	6627		286–15700	230–15700	910	1620	26200
	HA-1109-N1L			1	RR	Merlin 500-45	1	1400–3000	N	106	6	32'6"	27'6"	8'6"	172.2	10.9	5388		6767		400–8000	280–13500	440	3200	33600
	HA-1109-K1L			1	HS	HS-12-Z-17	1	1282–2650	N	106	6	32'6"	27'6"	8'6"	172.2	10.9	5458		6834		351–20600	270–21300	435	3280	32800
	HA-200-R1	Saeta	T	2	Tur	Marbore 11A	2	N	1763–22600	185	6½	34'1"	29'1"	10'7"	187.2	11.3	3697		6995		435–35400	362–24600	930	3346	39300
SWEDEN																									
SAAB	91B	Safir	T	1	Lyco	O-435-A	1	190–2550	N	46	3	34'9"	26'0"	7'2"	146.0		1580	990	2570		170–SL	169–5000	700	880	19200
	91C	Safir	T	1	Lyco	O-435-A	1	190–2650	N	46	3	34'9"	26'0"	7'2"	146.0	17.7	1580	730	2310		173–SL	171–5000	710	1040	21800
	210		Rs	1	ArS	Adder	1	N	1050–15000																
	29F		F,A,Re	1	DH	Ghost	1	N	5000–			36'1"	33'2½"	12'3½"	258.0		9500		13200		660–		1700		
	32A	Lansen	F,Re	2	RR	Avon RA-7	1	N	9500–			42'8"	48'0"	15'6"			15400		22200		700+				50000
	35	Draken	F	1	RR	Avon	1	N											17600		1000–				

ABBREVIATIONS

+—Plus.
1—With wing tip tanks.
2—Includes aileron.
3—Built under license from Hawker.
4—Also one S. E. P. R. rocket engine.
(a)—Two Wright R-3350-32W and two Westinghouse J-24 engines.
A—Attack.
AB—Attack bomber.
All—Allison Div.
Am—Ambulance.
AO—Artillery observation.
Ar—Argus.
AR—Alfa-Romeo.
ArS—Armstrong-Siddeley Motor, Ltd.
AS—Anti-submarine.
Av—Alvis, Ltd.
B—Bomber.
BE—Bomber escort.
Bl—Blackburn and General Aircraft, Ltd.
Br—Bristol Aeroplane Co., Ltd.
C—Cargo.
Cont—Continental Motors Corp.
DH—de Havilland Aircraft Co., Ltd.
Enm—E. N. M. A. S. A.
Eliz—Elizalde.
F—Fighter.
FB—Fighter bomber.
FR—Fighter reconnaissance.
GE—General Electric Co.
H—Hospital.
HB—Heavy bomber.
HS—Hispano-Suiza.
I—Interceptor.
IA—Instituto Aeronautico I Ae.
IT—Instrument trainer.
L—Liaison.
Lyco—Lycoming-Spencer Div.
M—Mine layer.
MB—Medium bomber.
N—No or none.
Nap—Napier.
NF—Night fighter.
O—Observation.
OL—Observation and liaison.
OR—Observation and reconnaissance.
P—Photographic.
PCL—Passenger, cargo or litter transport.
Pot—Potez.
PR—Photo-reconnaissance.
Pt—Patrol.
P&W—Pratt and Whitney Aircraft Div.
R—Rescue.
RB—Reconnaissance bomber.
Re—Reconnaissance.
Rf—Reconnaissance fighter.
RR—Rolls-Royce, Ltd.
Rs—Research.
SL—Sea level.
Sn—S. N. E. C. M. A.
Sub—Submarine search.
T—Trainer.
Ta—Tanker.
TB—Torpedo bomber.
TC—Troop and cargo transport.
Tr—Transport.
Tur—Turbomeca.
West—Westinghouse Electric Corp.
Wr—Wright Aeronautical Corp.

For Directory of the Aircraft Manufacturers listed above, see Table of Contents

1957 / U.S. AND FOREIGN CIVIL AIRCRAFT

MAKE AND MODEL	Type	A. T. C. Number	Number of Crew	Number of Seated Passengers	ENGINE: Make and Model	ENGINE: Number Used	ENGINE: Total Take-off Hp. at Specified RPM	Fuel Capacity (Gal.)	Oil Capacity (Gal.)	DIMENSIONS (Ft. & In.): Span	DIMENSIONS (Ft. & In.): Overall Length	DIMENSIONS (Ft. & In.): Height (Taxi Position)	DIMENSIONS (Ft. & In.): Wing Area (Gross) Sq. Ft.	DIMENSIONS (Ft. & In.): Aileron Area (Sq. Ft.)	WEIGHTS (Lb.): Empty	WEIGHTS (Lb.): Useful Load	WEIGHTS (Lb.): Gross	WEIGHTS (Lb.): Pay Load	PERFORMANCE: Maximum Speed at Altitude	PERFORMANCE: Cruising Speed at Altitude	PERFORMANCE: Range in Miles at Cruising Speed	PERFORMANCE: Initial Climb (Ft. per Min.)	PERFORMANCE: Service Ceiling with Normal Load (Ft.)	PERFORMANCE: Fuel Consumption at Cruising Speed (Lb. per Hr.)
UNITED STATES																								
Aero Commander 560A	PC-L	6A1	1	4-5	Lyco GO-480-D1A	2	550	156	10	44'1¼"	35'5"	14'9"	242.5	20.5	4181	1819	6000		206-SL	190-10000	990	1490	21800	180.0
560 Super	PC-L	2A4	1	4-5	Lyco GSO-480-A1A-6	2	680	223	10	44'1¼"	35'5"	14'9"	242.5	20.5	4340	2660	7000		290-10000	230-10000	1380	1600	24200	230.0
Bee Aviation Honey Bee	P-L	4A11	1	N	Cont A-65	1	65	8½	1	28'0"	18'0"	7'8"	96.0	5.4	610	250	860	200	120	110	240	1000	15000	24.0
Wee Bee	P-L	X	1	N	Kie O-45-35	1	30	2½		18'0"	15'0"	3'0"	44.0	2.2	210	210	410	200	62	72	50	300	9000	20.0
Queen Bee	P-L		1	3	Lyco O-320	1	150	36	1	32'10"	22'1"	8'0"	130.0	5.6	1190	960	2150	840	170	160	700	1000	18000	48.0
Beech D-50	PC-L	5A4	1	5	Lyco GO-480-C2C6	2	590-3400	134	6	45'3"	31'6"	11'4"	277.0	13.9	4025	2275	6300		214-3100	199-7060	1100	1450	20000	156.0
G-35	P-L	A777	1	3	Cont E-225-8	1	225-2650	39	2½	32'10"	25'2"	6'6½"	177.6	11.5	1722	1053	2775		194-SL	184-9000	775	1300	19000	57.2
E-18S	PC-L	A7S5	1-2	8	P&W R-985AN/14B	2	900-2300	286	17	49'8"	35'2½"	9'6"	361.0	17.5	6050	3250	9300		234-3300	215-10000	1480	1490	25700	278.0
Boeing 707-120	PC-L		3	109-125	P&W JT3C-4	4	40000**-	17400		130'10"	134'6"	38'3"	2433.0				250000			591	3000*		40000*	
707-220	PC-L			109-125	P&W JT4A	4		18078		130'10"	134'6"	38'3"	2433.0				250000	31000		605			40000*	
707-320	PC-L		4	122-147	P&W JT4A	4		23580		141'6"	146'8"	38'11"	2906.0				280000	35000*		600	4000*		40000*	
Call Air A-4 "150"	PC-L	A7S6	1	2	Lyco O-320	1	150-2700	25	2	36'0"	23'0"	7'0"	181.0	10.7	1000	550	1550	350	120	110	350	1000	18000	48.0
A-4 Modified	DS-L	A7S8	1	N	Lyco	1	150-2700	25	2	33'6"	23'0"	7'0"	181.0	10.7	950	1200	2150	850	105	100	300	1000	15000	48.0
S-1B1	PC-L	A7S4	1	1	Lyco O-320	1	150-2700	40	2	35'6"	23'6"	7'3½"	176.0	19.4	1000	650	1650	395	125-7000	113-7000	565	500	18000	48.0
Cessna 172	L	3A12			Cont O-300-A	1	145	42	2	36'0"	25'0"	8'6"	175.0		1260	940	2200	640	135-SL	124-7500		660	13300	
180	PC-LS	5A6			Cont O-470-K	1	230-2600	60	3	36'0"	26'0"	7'6"	175.0		1790	1060	2920		168*-SL	150*-SL		1150	16500	
310	PC-L	3A10			Cont O-470-M	1	240-2600	100	6	36'0"	27'0"	10'6"	175.0		2850	1750	4600		220*-SL	205-8000	875		20000	
182	PC-L	3A13			Cont O-470-L	1	230-2600	60	3	36'0"	26'0"	9'4"			1510	1040	2550		160*-SL	150*-SL		1100	19000	
620	PC-L		2	9	Cont GSO-526-A	4	1400-3200	535	20	55'0"	41'7"	16'5"	340.0†		10000	5000	15000		282-15000	260-12500	1700	1150	25000	
Champion 7EC	P-LS	759	1	1	Cont C90-12F	1	95	26	1¼	35'0"	8'0"	8'0"	340.0	32.0	890	560	1450		122-9000	112-8000	550	990	15000	30.0
Colonial C-1	ET-LS	1A13	1	2	Lyco O-320	1	150-2700	40	2	34'0"	23'6"	8'10"	151.0	10.7	1400	750	2150		130-10000	115-5000	800	800	14000	54.0
Convair 440	PE-L	C131	3	44-52	P&W R-2800-CB-17	2	2500	1730	60	105'4"	79'2"	28'1¼"	920.0	43.8	31305	17795	49100	8530						
880	PC-L		6	80-109	GE CJ-805	4		10770		120'0"	124'2"	37'4"	2000.0		80800	92700	173500	26320	609-25000					
Douglas DC6A-1135A	C-L	6A3	3	N	P&W R-2800-CB-17	4	10000-2800	5512	166	117'6"	105'7"	28'8"	1463.0	85.1	51584	55416	107000	30010	368-19700	315-22400	4100	1000	26000	2545.0
DC6B-1198A	PC-L	6A4	5	52-102	P&W R-2800-CB-16	4	9600-2800	3992	166	117'6"	105'7"	28'8"	1463.0	85.1	55357	44643	100000	23490	360-18100	315-22400	2960	1040	26000	2545.0
DC6B-1225A	PC-L	6A4	7	52-85	P&W R-2800-CB-17	4	10000-2800	5512	166	117'6"	105'7"	28'8"	1463.0	85.1	58340	48660	107000	22953	368-19700	315-22400	4100	1000	26000	2545.0
DC-7	P-L	4A10	3-5	65-95	Wr 3350-972TC18DA2	4	13000-2900	5512	184	117'6"	108'11"	28'7"	1463.0	89.0	65900	56400	122200	19300	410-22200	370-24500	3750	1150	28200	2900.0
DC-7B	PC-L	4A10	5-9	60-96	Wr 972TC18DA4	4	13000-2900	6490	197	117'6"	108'11"	28'7"	1463.0	89.0	68073	57927	126000	22650	406-22100	361-24300	4650	1135	23900	2955.0
DC-7C	PC-L	4A10	5-9	65-99	Wr 988TC18EA1	4	13600-2900	7824	233	127'6"	112'3"	31'10"	1637.0	93.4	72643	66357	143000	28857	406-22700	359-24400	5470	1050	22800	2956.0
Fletcher FU-24	PC-L	4A12	1	4	Cont O-470-E	1	225	44	3	42'0"	31'10"	9'4"	294.0	19.6	1960	1520	3500	1210	131-SL	111-SL	420	650	13500	68.4
FU-24A	PC-L	Pend	1	4	Cont O-470-N	1	240	44	3	42'0"	31'10"	9'4"	294.0	19.6	1990	1490	3500	1190	140-SL	118-SL	415	750	14790	74.5
Helio H-391-B	PC-LS	1A8	1	3	Lyco GO-435-C2B	1	280-3400	60	2½	39'0"	30'0"	8'9½"	231.0	20.7	1800	1100	3000		167-8500	160-8500	700	1250	23000	82.0
Lockheed 188A	P-L		3	44-91	All 501-D13	4	15000-13820	5360	96	99'0"	104'6½"	32'9.4"	1300.0		55993	57007	113000	21600	448	405-22000	2950	2150	32000	4250.0
1649A	P-L		5	46-87	Wr R3350-988TC18EA2	4	13600	9600	254	150'0"	116'1¾"	23'4¾"	1850.0	105.0	85289	70731	156000	21243	347-22600	337	4929	1060	29700	2950.0
1049G	P-L		5	47-89	Wr R3350-988TC18EA3	4	13000	6550	237	123'0"	113'7"	24'9"	1650.0	99.6	73910	63590	137500	22604	336-22600	328-20000	3409	1165	28100	2950.0
1049H	PC-L		5	94-100	Wr R3350-988TC18EA3	4	13000	6550	237	123'0"	113'7"	24'9"	1650.0	99.6	69326	68174	137500	40308	326-22600	319-20000	3403	1165	28100	2950.0
Mooney Mark 20	P-L	2A3	1	3	Lyco O-320	1	170-2700	50	2	35'0"	23'2"	8'4½"	166.9	11.1	1415	1035	2450	720	170-SL	165-4900	900	900	22000	55.0
Piper PA-18-95	P-L	1A2	1	1	Cont C-90	1	90-2475	18	1½	35'3"	22'4"	6'8"	178.5	18.8	800	700	1500	400	112-SL	100-SL	360	710	15750	30.0
PA-18-150	P-L	1A2	1	1	Lyco O-320	1	150-2700	36	2	35'3"	22'6"	6'7"	178.5	18.8	930	740	1750	505	128-SL	113-SL	500	1060	20500	46.2
PA-23	P-L	1A10	1	3	Lyco O-320	2	300-2700	72	4	37'0"	27'1"	9'5"	204.0	16.7	2160	1340	3500	835	182-SL	167-SL	720	1350	21000	96.0
PA-22-150	P-LS	1A8	1	3	Lyco O-320	1	150-2700	36	2	29'3"	20'6"	8'4"	147.5	13.2	1100	900	2000	485	139-SL	123-SL	570	820	15000	46.2
PA-18-150	AU-L	1A2	1	N	Lyco O-320	1	150-2700	36	2	35'3"	22'6"	6'7"	178.5	18.8	1060	1060	2070	1010	105-SL	90-SL	360	760	17000	46.2

Stits	SA6A	P-L	Pend	1	1	Cont	C-85-12	1	87-2550	13	1¼	29'0"	17'6"	6'8"	130.0	12.0	566	360	1006	190	135-5000	120-5000	250*	1000*	12000*	27.0				
	SA7A	P-L	Pend	1	1	Cont	A-65	1	65-2300	17	1	24'4"	17'9"	6'8"	120.0	10.0	600	370	1080	200	110-5000	100-5000	350*	1200	12000	27.0				
Taylorcraft	400	PC-L	3A3	1	3	Cont	O-470-J	1	225-2550	66	3	34'8"	24'4"	7'1⅛"	178.5	14.4	1750	1290	3040	703	160	150-7500	750	900	15000	84.0				
	500	PC-L	3A3	1	4	Cont	O-470-J	1	225-2550	66	3	34'8"	24'4"	7'1⅛"	178.5	14.4	1800	1240	3040	653	160	150-7500	750	900	15000	84.0				
	Seabird	PC-S	3A3	1	3	Cont	O-470-J	1	225-2550	66	3	34'8"	24'4"	7'1⅛"	178.5	14.4	2010	1030	3040	443	140	130-7500	650	700	15000	84.0				
	Topper	DS-L	3A3	1	N	Cont	O-470-J	1	225-2550	44	3	34'8"	24'4"	7'1⅛"	178.5	14.4	1990	1777	3767	1190	120	110-SL	380	600	15000	84.0				
Temco	D-16A	P-L	Pend	1	3	Lyco	O-430-A	2	340-2700	146	4	33'4½"	27½"	9'6½"	178.3	9.6	2350	1250	3600	614	180-SL	170-7000	1200	1400	20000	54.0				
BELGIUM																														
Avions Fairey	Tipsy Junior	P-L		1	N	Cont	A-65	1	65-2300	11¾	⅞	23'1"	18'9⅛"	4'5"	114.0	13.8	472	300	772		108-SL	87-SL	326	787	14800	19.0				
	Tipsy Belfair	P-L		1	1	WM	11	1	62-2800	16	2	31'0"	21'7"	5'6"	129.0	13.6	606	496	1102		115-SL	93-SL	455	492	16400	19.0				
GREAT BRITAIN																														
Auster	Aiglet	P-L		1	2	DH	Gypsy Major Mk-1	1	130-2350	18	4	36'0"	23'8"	8'5"	184.5	18.0	1215	785	2000		126-1000	105-1000	245	710	15000	46.8				
	Autocar	P-L		1	3	DH	Gypsy Major Mk-1	1	130-2350	38	4	36'0"	23'2"	8'3"	184.5	18.0	1413	987	2400	570	117-1000	100-1000	500	525	11000	46.8				
	J-5-F	TP-L		2	2	DH	Gypsy Major 1	1	130-2350	19	3½	32'0"	22'2"		169.5	7.9	1323	877	2200		132-1000	112-1000	270	1200	16000					
	Autocar 145 J-5-P	P-L		1	3	DH	Gypsy Major 10	1	145-	38	4	36'0"	23'2"	8'5"	189.5	18.0		650			125-1000	111-1000	425	620	13500					
	B-8	A-L		1	2	Cont	O-470-M2	1	240-	29	3	42'0"	28'1"	8'4"	254.7	40.2	2250	1775	3675	1400	127-1000	101-1000	218	610	10500					
	J-5-R	P-L		1	2	DH	Gypsy Major 10	1	145-	38	4	36'0"	25'2"	6'6"	184.5	18.0			2250		128-1000	112-1000	400	1025	22000	52.0				
Aviation Traders	Accountant	PC-L		2-3	34-36	RR	Dart R-Da-6	2	3460-	1540		82'6"	67'3½"	25'6"	632 0	38 0	16115	11709	28500	6800		294-25000	575	1500	35000	1060.0				
	Accountant	PC-L		2-3	34-36	RR	Dart R-Da-7	2	3980-	1540		82'6"	67'3½"	25'6"	632 0	38 0	16615	11709	29000	6800		325-25000	560	2000	37000	1290.0				
Blackburn	Universal	PC-L		2-4	200*	Br	Centaurus 573	4	12600-2800	4300	140	162'0"	99'5"	38'9"	2916 0	168 0	81740	61260	143000	50000	242-3600	230-6000	1730	780	15750	2800.0				
Bristol	Britainia 100	P-L		9	92	Br	Proteus 705	4	15120-	8036	53	142'3½"	114'0"	36'8"	2075 0	140 0	64000	66000	155000	25000	371	340-	3629	1500	30000	4150.0				
	Britainia 300	P-L		9	101	Br	Proteus 755	4	16480-	8036	53	142'3½"	124'4"	36'8"	2075.0	140 0	65000	70000	160000	30000	405	357-	3807	1720	32000	4700.0				
	Britainia 310	P-L		9	93	Br	Proteus 755	4	16480-	10190	53	142'3½"	124'4"	36'8"	2075 0	140.0	83250	88750	175000	28000	403	357-	4758	1500	31000	4800.0				
	Britainia 250	PC-L		9	84	Br	Proteus 755	4	16480-	10190	53	142'3½"	124'4"	36'8"	2075 0	140 0	84850	85150	175000	33000	401	357-	4389	1500	30500	4800.0				
	170 Mk-31	PC-L		3	50	Br	Hercules 730	2	3960-	8036	53	108'0"	68'4"	21'6"	1487.0	54 3	27946	16054	44000	12997	193-50000	164-5000	2500	1400	22500	798.0				
	171 Mk-4	H		1	4-5	Av	Leonides	1	525-	89	6	48'7"	46'2"	14'7"	1860 0		3983	1417	5400		126-	90-	368	1300	15500	158.0				
de Havilland	Heron Series 2	PE-L		1-2	8-17	DH	Gipsy Queen 30 Mk-2	4	1000-2500	495	18½	71'6"	48'6"	15'7"	499.0		8284		13500	3223		183-8000	680	930	18000					
	Comet 2	P-L		4	44	RR	Avon	4	29400*-	8408		115'0"	96'0"	28'4½"	2036 0				120000	13000		480-40000	2300							
	Dove Series 5 & 6	PE-L		1-2	6-11	DH	Gipsy Queen 70 Mk-2	2	760-3000	202	11¾	57'0"	39'3"	13'4"	335.0		5678		8800	1703		179-8000	565	920	20000					
	Chipmunk	T-L		2	N	DH	Gipsy Major 10 Mk-2	1	145-2550	29	3	34'4"	25'5"	7'0"	172 5	13 9	1430		2100		136-SL	119-SL	380	840	15800					
	Comet 4 DH-106	P-L		4	58-76	RR	Avon RA-29	4	42000*-	10632		115'0"	111'6"	28'9"	2121 0				152500	19300		500-40000	2945							
	Comet 4A DH-106	P-L		3-5	70-92	RR	Avon RA-29	4	42000*-	10476	3¾	107'9½"	114'10"	28'5"	2066.0		71810	80730	152500	22690		543-23500	2040			11840.				
Fairey	Ultralight	H		1	1	BI	Palouste	1				28'3½"	15'0"	8'2"			985	915	1900	700	105-1000	85-1000	170	1600	18000					
	Rotodyne	H		3	40-44	Nap	Eland EC7	2	7000-12500			46'6"	58'6"	22'2"	475 0		25000	14000	39000	11000		160-3000	400	1670	12000	2100.0				
Handley Page	Herald	PC-L		2	36-44	Av	Leonides Major	4	3480-3000	1000	40	95'0"	70'3"	22'4"	886 0	60.0	23200	11014	37500	10100	224-15000	182-10000	1819	1375	19900	734.0				
Hunting Percival	President	PCS-L		1-2	8-12	Av	Leonides 503-4	2	1100-3000	286	16¾	64'6"	46'4"	16'1"	400.0	50.2			13500		220-1800	167-8000	1110		24000	242 0				
	Provost	T-L		2	N	Av	Leonides Mk-2500	1	550-	72	6	35'2"	29'0"	8'10"					4250		200-2500	177-11500	633	2100	22500					
Saunders-Roe	Skeeter Mk-6	H		2		DH	Gipsy Major 201	1	200-2600	23	3	32'0"					1626		2150		101-	99-	206	1020	11700					
Scottish Aviation	Pioneer	PC-L		1	4-5	Av	Leonides 502/4	1	540-3000	72	5½	49'9"	34'4"	10'1"	390 0	32.5	4013	1787	5800	1145	145-1500	120-5000	427	1148	23000	115 0				
	Pioneer	PC-L		1	4	P&W	Wasp Jr.	1	450-2300	72	5½	49'9"	34'7"	10'1"	390 0	32.5	3782	1518	5300	876	134-3500	115-5000	416	935	18000	120 0				
	Twin Pioneer	PC-L		1	16	Av	Leonides 503/8	2	1060-3000	180	10¾	78'6"	45'1"	11'7"	670.0	44.0	9075	4425	13500	3008	167-1500	139-5000	565	900	20000	266.0				
Vickers-Armstrongs	700D	PC-L	N	2	40-50	RR	Dart 510	4	(a)	2360	7½	94'0"	81'10"	26'9"	963 0	94.8	36950	23060	60000	11329	340-20000	325-20000	2120	1500	24000	2220.0				
	800	PC-L	N	2	53-70	RR	Dart 510	4	(a)	2325	7½	94'0"	85'0"	26'9"	963 0	94.8	37800	23800	63000	13518	335-20000	320-20000	1950	1500	23000	2280.0				
	810	PC-L	N	2	82-86	RR	Dart 525R-Da-7	4	31840-14600	2282	7½	94 0"	85'6"	26'9"	963 0	94.8	40504	26260	67500	13288	375-20000	365-20000	1910	1750	25000	2610.0				
Westland	Dragonfly	H		1	3	Av	Leonides 521/1	1	530-3000	83	6	49'0"	46'0"	13'0"			4300	1400	5700	570	103-SL	88-5000	308	1050	11000	155.0				
	Whirlwind	H		2	8-10	P&W	R-1340	1	600-2250	145	6	53'0"	42'2"	15'3"			4990	2510	7500	1260	110-SL	85-5000	282	780	7000	314.0				
	Widgeon	H		1	4	Av	Leonides 521/1	1	530-3000	83	6	49'0"	41'3"	12'11"			4322	1578	5900	748	103-SL	80-SL	300	970	10500	159.0				
CANADA																														
de Havilland	Beaver DHC-2	PC-LS		1	6-7	P&W	R-985-AN6B	1	450-2300	95	6¼	48'0"	30'4"	9'0"	250.0	24.6	2960	2140	5100	1722	163-5000	143-5000	650	1020	18000	115.0				
	Otter DHC-3	PC-LS		1	10-14	P&W	R-1340-S1H1-G	1	600-2250	216	10¾	58'0"	41'10"	12'7"	375.0	26.3	4371	3629	8000	2937	160-5000	139-5000	1008	1000	±9000	160.0				
FRANCE																														
Breguet	940	PC-L			21	Tur		4				58'4"	40'0"						14300			240-								
	Deux Ponts	PC-L			107-164	P&W	R-2800-C	4	9800-2800			140'0"	95'0"		1997.0				113800			250-	2000							

For abbreviations and references see page 194

For Directory of the Aircraft Manufacturers listed above, see Table of Contents

U. S. AND FOREIGN CIVIL AIRCRAFT—*concluded*

MAKE AND MODEL	Type	A. T. C. Number	Number of Crew	Number of Seated Passengers	ENGINE: Make and Model	ENGINE: Number Used	ENGINE: Total Take-off Hp. at Specified RPM	Fuel Capacity (Gal.)	Oil Capacity (Gal.)	DIMENSIONS (Ft. & In.): Span	Overall Length	Height (Taxi Position)	Wing Area (Gross) Sq. Ft.	Aileron Area (Sq. Ft.)	WEIGHTS (Lb.): Empty	Useful Load	Gross	Pay Load	PERFORMANCE: Maximum Speed at Altitude	Cruising Speed at Altitude	Range in Miles at Cruising Speed	Initial Climb (Ft. per Min.)	Service Ceiling with Normal Load (Ft.)	Fuel Consumption at Cruising Speed (Lb. per Hr.)
FRANCE—*continued*																								
Holste MH-1521	PC-L		1	6	P&W R-985	1	450–			45'0"	28'2"		271.0		3263		5954		224–	168–	745	1082		
Hurel-Dubois HD-321	PC-L		3	44	Wr 982-C9-HE-1	2	3050–	952	24	148'0"	78'4"	27'6"	1075.0	66.0	24500	16350	42500	14600	206–	174	1350	1054	21000	1376.0
HD-34	Ph-L		6		Wr 982-C9-HE-2	2	2950–	1610	48¼	148'0"	77'6"	27'6"	1075.0	66.0	25700	16910	42500	5730	187–10000	161–10000	500		23000	
Morane-Saulnier MS-760	P-L		1	3	Tur Marbore II	2	1766*–2260†	360	3½	33'3"	32'11"	8'8"	194.0	21.0	4290	3210	7500		405–20000	345–23000	930	2300	34000	890.0
MS-500	P-L		1	2	Ar AS-10	1	240–	89½	4¼	46'9"	31'9"	12'6"	279.9		2264		3276		92–SL	76–	435			
MS-733	TP-L		1	2	Pot 6-D	1	230–	630	4	37'0"	30'7"	11'4"	236.0		2830		3856		162–SL	143–	621	1575		
Ouest Aviation SO-1221	H		1	1	Tur Palouste	1	250*–	87		36'0"	17'5"	8'7"	1012.0		795	970	1765	620	80–	62–	170	1470	14000	198.0
S.I.P.A. 1000	P-L		1	1	Cont C-90-12F	1	90–	16½		29'3"	17'11"	7'3"			738		1256	66	124–	112–	373			
S.N.C.A.N. Nord 2501	PC-L		3	42	Sn Hercules	2	4080–2800	1120	63	106'7"	72'0"	19'9"	1088.9	42.8	28200	19300	45500	16800	248–10000	202–10000	1550	1180	23600	770.0
Nord 3201	T-L		1	1	Sn 4-L-22	1		23	3½	36'5"	32'0"				1545	550	2095		143–	124–		1909		
856-N	P-L		1	3	Sn 4-L-06	1		26½		39'6"	29'3"	7'3"	55.3		1367		2205		118–	105–				
Nord 1203-11	P-L		1	3	Reg 4-LO	1	135–2280			33'5"	23'7"	9'1"	140.0		1336	367	2310	509	174–	136–	560	164	16400	
Nord 2502-A	PC-L		3	45	(b)	4	(c)			106'7"	72'0"	19'9"			28800		48500	18350	248–10000			1800	22000	
Sud-Est Aviation SE-210	PC-L		4	64–80	RR Avon RA-29	2	21000*–	4755		112'8"	104'10"	26'6"	1579.0		48000	56800	94800	19800		492–39300	2320	406		
SE-3130	H		1	4	Tur Artouste II	1	400*–33000			33'0"	31'9"	9'0"			1700	1300	3000		113–SL	106–	320	1180	14800	
ITALY																								
Aer Macchi MB-308	P-L		1	1	Cont C-85	1	85–2575	21	1	32'9½"	21'5"	7'2"	147.6	11.8	902	528	1430	526	106–SL	88–SL	470	630	14250	28.6
MB-308	P-L		1	1	Cont C-90	1	90–2475	21	1	32'9½"	21'5"	7'2"	147.6	11.8	902	528	1430	526	110–SL	92–SL	445			30.0
MB-308-1	P-S		1	1	Cont C-90	1	90–2475	21	1	32'9½"	21'8½"	8'9"	147.6	11.8	1035	484	1519	484	105–SL	88–SL	435			
MB-308-G	P-L		1	2	Cont C-90	1	90–2475	23¼	1	32'9½"	21'5"	7'2"	147.6	11.8	946	638	1584	638	108–SL	90–SL	335			32.7
MB-320	PC-L		1	5	Cont E-185	2	410–2600	93	8	42'7½"	28'5"	10'6"	227.1	16.2	3652	904	5500	944	162–SL	136–6500	810	925	14750	116.0
MB-320	PC-L		1	5	Cont E-225	2	450–2600	93	8	42'7½"	28'5"	10'6"	227.1	16.2	3652	904	5500	944	169–SL	143–6500	700	1220	17900	120.0
Piaggio P-148	P-L		1	2	Lyco O-435-A	1	190–2550	45	3	36'5"	27'7"	7'10"	200.0	16.4	1950	875	2825		146–SL	124–6500	450	845	14400	68.5
P-148-MT	T-L		1	1	Lyco O-435-A	1	190–2550	45	3	36'5"	27'7"	7'10"	200.0	16.4	1931	715	2646		147–SL	127–3000	570	900	18000	58.5
P-136-L-1	PC-LS	813	1	4	Lyco GO-480-B	2	540–3400	190	6	44'4½"	35'6"	12'7"	270.0	25.0	4400	1600	6000	935	184–SL	182–8000	990	1180	18500	216.0
P-136-L-2	PC-LS	Pend	1	4	Lyco GSO-480-A1A	2	680–3400	190	7½	44'4½"	35'6"	12'7"	270.0	25.0	4670	1944	6614	935	210–12000	190–13500	935	1260	25500	230.0
P-149-D	PC-L		1	3-4	Lyco GO-480-B	1	270–3400	63	3	36'6"	28'2"	9'7"	203.0	16.4	2550	1150	3700	700	190–SL	165–7500	620	1100	16500	108.0
SPAIN																								
A.I.S.A. 1-11B	P-L		2	N	Cont C-90	1	95–2625	20¼	1¼	30'7"	20'1"	6'2"	144.0	12.0	928	548	1477	N	127–SL	110–SL	425	695	14900	33.1
AVD-12	PC-L		1	2	En Tigre G-IVB	1	150–2300	44	2	36'2"	25'5"	8'11"	194.0	22.6	1590	840	2430		140–SL	130–6560	560	950	17700	53.9
AVD-12C	PC-L		1	3	Cont O-470-A	1	225–2600	44	1¼	36'2"	25'5"	8'11"	194.0	22.6	1668	1200	2868		173–SL	166–6560	622	1180	21000	86.4
SWEDEN																								
SAAB 91-B	TP-L		1	2	Lyco O-435-A	1	190–2550	46	3	34'9"	26'0"	7'2"	146.0		1580	990	2570		170–SL	169–5000	700	880	19200	54.0
91-C	TP-L		1	3	Lyco O-435-A	1	190–2550	42	3	34'9"	26'0"	7'2"	146.0		1625	1060	2685		169–SL	168–5000	630	940	17900	54.0

ABBREVIATIONS

•—Pounds of thrust.
+—Plus.
†—Includes ailerons.
(a)—6,400 hp. and 1,460 lb. thrust at 14,500 rpm.
(b)—Two S.N.E.C.M.A. Hercules and two Turbomeca Marbore engines.
(c)—4,080 hp. and 1,700 lb. thrust at 2,800 rpm.
A-L—Agriculture, land.
All—Allison Div.
Ar—Argus.
Au-L—Agriculture or utility, land.
Av—Alvis, Ltd.
Bl—Blackburn and General Aircraft, Ltd.
Br—Bristol Aeroplane Co.
C-L—Cargo, land.
Cont—Continental Motors Corp.
DH—de Havilland Aircraft Co., Ltd.
DS-L—Duster or sprayer, land.
En—E.N.M.A.S.A.
ET-LS—Executive transport, land or sea.
GE—General Electric Corp.
H—Helicopter.
Kle—Kiekhaefer Corp.
L—Land.
Lyco—Lycoming-Spencer Div.
N—No or none.
Nap—Napier.
PC-L—Passenger or cargo, land.
PC-LS—Passenger or cargo, land or sea.
PC-S—Passenger or cargo, sea.
PCS-L—Passenger, cargo or survey; land.
PE-L—Passenger or executive, land.
Pend—Pending.
Ph-L—Photographic, land.
P-L—Passenger, land.
P-LS—Passenger, land or sea.
Pot—Potez. **P-S**—Passenger, sea.
P&W—Pratt and Whitney Aircraft Div.
Reg—Regnier.
RR—Rolls Royce, Ltd.
SL—Sea Level.
Sn—S.N.E.C.M.A.
T-L—Trainer, land.
TP-L—Trainer or passenger, land.
Tur—Turbomeca.
WM—Walter Mikron.
Wr—Wright Aeronautical Corp.

For Directory of the Aircraft Manufacturers listed above, see Table of Contents

1957 / U.S. ROTARY WING AIRCRAFT

MAKE AND MODEL	GENERAL					ENGINE			MAIN ROTOR							ANTI-TORQUE ROTOR					WEIGHTS (Lb.)			PERFORMANCE						LANDING GEAR	
	A. T. C. Number	Number of Seats	Fuel Capacity (Gal.)	Octane Number Recommended	Oil Capacity (Gal.)	Make and Model	Number Used	Rated Hp. at Specified R. P. M.	Number Used	Location	Blades per Rotor	Diameter of Rotor (Ft. In.)	Blade Area (Sq. Ft.)	Type (If more than one used)	Rotor R. P. M. at Cruising Speed	Disc Area (Sq. Ft.)	Number of Blades	Rotor Diameter (Ft. In.)	Blade Area (Sq. Ft.)	Rotor R. P. M. at Cruising Speed	Disc Area (Sq. Ft.)	Gross (Normal Load)	Empty	Useful Load	Max. Speed at Altitude	Cruising Speed at Altitude	Fuel Consumption Cruising Speed (Lb./hr.)	Range (Miles) at Cruising Speed	Rate of Climb: Maximum (Ft./min.)	Rate of Climb: Vertical (Ft./min.)	Service Ceiling—Normal Load	Type	Tread—Main Gear
Bell 201 (XH-13F)		3				Cont Artouste I	1	200*–	1	C	2	35'1"					2					2500	1504		95–SL			89			10100	S	
47G (H-13G)		3	43	91	2	Frank 6V4-200-C32	1	200–	1		2	35'1"	35.3		340	965	2	5'8"	2.4	1550	25.9	2350	1435	941	100–SL	78–	72	247	800	400	8800	S	7'6"
47G-2 (H-13H)		3	43			Lyco VO-435	1	200-3100	1	C	2	35'1"	35.3		340	965	2	5'8"	2.4	1550	25.9	2450	1564	797	100–SL	80–		251			15700	S	
47H		3	35	91	2	Frank 6V4-200-C32	1	200–	1	C	2	35'1"	35.3		340	965	2	5'8"	2.4	1550	25.9	2350	1502	670	100*–SL			219			9900	S	7'6"
47J (HUL-1)		4	35	80	3	Lyco VO-435	1	220–	1	C	2	37'2"					2					2585	1538		105–SL			214			15000	S	7'6"
61 (HSL-1)		4	425			P&W R2800-50	1	1900–	2	Tan	2	51'6"													115–SL							Qua	
200 (XV-3)		1				P&W R-985	1	450–	1	Tan	3	25'0"													160–2500							S	
204 (XH-40)		6				Lyco XT-53	1	700–				44'0"										5619	3344		152–			202			19000		
Cessna CH-1B	3H10	2-4	60	91	3	Cont FSO-526-A	1	270-3100	1		2	35'0"	37.9		367	982	2	7'0"	3.3	1636	38.5	3000	2000	1000	122–SL	100*–	120	290	1000*		15000*	S	8'4"
CH-1A (YH-41)		4	60			Cont FSO-526-A	1	270-3000			2	35'0"					2	7'0"				3000	1975	1025	122–SL	111–		290	1000		15000		
Doman LZ 5-2		6	119	100	7	Lyco SO-580-A1B	1	400-3300	1		4	48'0"	73.6		205	1810	3	10'0"	6.2	1000	78.5	5200	3250	1950	104–1500	81–1500	138	330	850		10500	Qua	7'2"
YH-31		4	119	100	7	Lyco SO-580-A1B	1	400-3300	1		4	48'0"	73.6		205	1810	3	10'0"	6.2	1000	78.5	5200	3250	1950	76–1500	70–1500	124	310	850		9100	Qua	7'2"
D-11		6	119	100	7	Lyco SO-580-A1B	1	400-3300	1	C	4	48'0"	73.6		205	1810	3	10'0"	6.2	950	78.5	5200	3136	2064	104–1500	81–1500	138	330	850		10500	QT	7'6"
Gyrodyne GCA41(XRDN1)		1				Nel H-59	1	40-4000	2		2	15'0"		CA	640	177						500	250	250	60*–							Tri	3'10½"
Hiller 12-C (H-23C)	6H2	3	26	91	2½	Frank 6V4-200-C33	1	200-3100	1	C	2	35'0"	32.3		338	963	2	5'6"	2.3	1957	23.8	2500	1737	763	84–SL	71–SL	87	104	770		9600	Skid†	7'6"‡
YH-32		2	50	72	N	Hil 8RJ2B	2	80*-550	1	C	2	23-0"	17.6		550	415	1	2'8"	.6	3550	5.5	1080	544	536	68–SL	60–SL	744	26	600		6900	Skid	7'0"
Kaman HOK-1		5	100	100		P&W R-1340-48	1	600–	2		2	47'0"		Int	249							5800	4040	1760	95–8000	65–		220	1300	800	18000	Qua	8'2"
Kellet KH-15		1	20			RM TU-111	2		1		2	18'0"	9.0		725	254	2	2'6"			4.9	610	264		70–	60–	930	16				Tri	
McDonnell XV-1		4				Cont.	1		1			26'0"													200–							Skid	
Cargo Unloader									1		3																						
Roter-Craft RH-1		1		N	N	RC R-1	2		1	C	2						1															S	
Sikorsky S-55C	1H4	12	185	80	9½	P&W R-1340	1	600-2250	1	C	3	53'0"			194	2206	2	8'9"		1360	59.1	7200	4688	2312	101–	86–	222	405	760	200	9800	Qua	11'0"
S-59		4	135	JP4	1½	Cont Artouste I	1	425*-35000	1	C	4	35'0"			338	961	3	6'4"		1857	31.6	3625	2200	1453	147–SL	138–SL	370	288	2290	1100	17300	Conv	8'0"
S-58B	1H11	14	286	115	12¾	Wri R-1820-84	1	1525-2800	1	C	4	56'0"			224	2460	4	9'4"		1330	68.7	12700	7560	5140	132–SL	104–	492	340	1340	600	9600	Conv	12'0"
S-56						P&W R-2800	2	2100-2700	1	C	5	72'0"				4080	4															Conv	19'9"
S-55A	Pend	12	185	91	9½	Wri 7BA-990C7BA1	1	800-2600	1	C	3	53'0"			194	2206	2	8'9"		1360	59.1	7500	5188	2312	112–SL	91–SL	258	360	1020	100	10600	Qua	11'0"
Vertol H-21B		22	300	100		Wri 1820-103	1	1425-2700	2	Tan	3	44'0"		Tan			N					13500	8600	4700	130–SL	98–5000		370	1100*	900*	10600	Tri	
H-21C		22	300	100		Wri 1820-103	1	1425-2700	2	Tan	3	44'0"		Tan			N					13500	8730	4570	130–SL	98–5000		370	1100*	900*	10000	Tri	
YH-16		43		100		P&W 2180	2	1650–	2	Tan	3	82'0"		Tan			N					32000*			125*–			200*			18000*	Tri	
YH-16A		43				All T-38	2	1800*–	2	Tan	3	82'0"		Tan			N								125*–			200*			18000*	Tri	

ABBREVIATIONS

*—Pounds of thrust.
•—Plus.
†—Navy model quadracycle.
‡—Mavy model, 7' 8".
All—Allison Div.
C—Center.
CA—Co-axial.
Cont—Continental Motors Corp.
Conv—Conventional.
Frank—Franklin (Aircooled Motors).
Hil—Hiller Helicopters.
Int—Intermeshing.
Lyco—Lycoming-Spencer Div.
N—No or none.
Nel—Nelson.
Pend—Pending.
P&W—Pratt and Whitney Aircraft Div.
QT—Quadracycle and tail skid.
Qua—Quadracycle.
RC—Rotor-Craft Corp.
RM—Reaction Motors.
S—Skid.
SL—Sea level.
Tan—Tandem.
Tri—Tricycle.
Wri—Curtiss-Wright.

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RECIPROCATING TYPE

ENGINE MAKE AND MODEL	A. T. C. Number	GENERAL DATA: Arrangement	Cooling Medium	Number of Cylinders Bore and Stroke (In.)	Total Piston Displacement (Cu. In.)	Compression Ratio (to —1)	B.M.E.P. at Maximum Hp. (Lb. per Sq. In.)	Blower Ratio	Cylinder Material	No. of Valves per Cylinder: Intake	Exhaust	Valve Arrangement	RATINGS: Maximum (Except Take-off): Horsepower	R. P. M.	At Sea Level or Altitude (Ft.)	Take-off: Horsepower	R. P. M.	Cruising: Horsepower	R. P. M.	Octane Rating of Fuel Required	Propeller Drive Ratio (to —1)	Weight (Lb.): Engine Dry—Without Hub or Starter	Per Maximum Hp. (Except Take-off)	Carburetor: Number Used and Make	Type	Ignition System—Make	Starting: Make	Method	Installation Dimensions (Overall—Ins.): Length	Height or O. D.	Width	Height above Engine Bed	Diameter Mounting Ring or Distance Bet-ween Bearers
Continental A-65-8	205	Hor	Air	4-3⅞x3½	171.0	6.30	131	N	SA	1	1	In	65	2300	SL	65	2300	55	2150	73	D	176	2.70	1-Str	FL	Eis	N	EM	31.00	23.30	31.50	...	...
C-85-12	233	Hor	Air	4-4⅛x3½	188.0	6.30	139	N	SA	1	1	In	85	2575	SL	85	2575	61	2300	73	D	176	2.14	1-Str	FL	Scin	N	...	31.00	24.20	31.50	...	...
C-85-8F	233	Hor	Air	4-4⅛x3½	188.0	6.30	139	N	SA	1	1	In	85	2575	SL	85	2575	61	2300	73	D	194	2.07	1-Str	FL	Scin	DR	EM	32.00	24.20	31.60	...	...
C-90-8F	252	Hor	Air	4-4⅛x3⅞	200.9	7.00	143	N	SA	1	1	In	90	2475	SL	90	2455	64	2200	80	D	194	2.07	1-Str	FL	Scin	DR	EM	32.00	24.20	31.60	...	...
C-90-12F	252	Hor	Air	4-4⅛x3⅞	200.9	7.00	143	N	SA	1	1	In	90	2475	SL	95	2655	64	2200	80	D	188	2.08	1-Str	FL	Scin	DR	EM	31.00	24.20	31.50	...	...
E-185	246	Hor	Air	6-5x4	471.0	7.00	135	N	SA	1	1	In	185	2300	SL	205	2600	135	2070	80	D	355	1.86	1-Str	PI	Scin	DR	EM	32.00	24.20	31.60	...	...
E-225-8	267	Hor	Air	6-5x4	471.0	7.00	143	N	SA	1	1	In	225	2650	SL	225	2650	175	2400	80	D	357	1.59	1-Str	PI	Scin	Ecl	EM	46.66	22.30	33.41	...	...
O-470-11	269	Hor	Air	6-5x4	471.0	7.00	140	N	SA	1	1	In	190	2300	SL	213	2600	...	...	80	D	395	2.07	1-Str	PI	Scin	Ecl	EM	46.66	22.30	33.41	...	...
W-670-23	162	Rad	Air	7-5½x4½	867.8	6.10	130	N	SA	1	1	In	240	2200	SL	240	2200	175	2000	80	D	519	2.12	1-Str	FL	Scin	...	...	45.20	30.10	33.41	...	...
O-470-B	273	Hor	Air	6-5x4	471.0	8.00	156	N	SA	1	1	In	240	2600	SL	240	2600	180	2360	91/96	D	410	1.71	1-Ben	PI	Scin	DR	EM	35.56	42.25	42.50	...	...
O-470-13A	269	Hor	Air	6-5x4	471.0	7.00	146	N	SA	1	1	In	225	2600	SL	225	2600	...	...	80	D	416	1.84	1-Ben	PI	Scin	DR	EM	43.31	19.62	33.62	...	...
O-470-2	...	Hor	Air	6-5x4	471.0	7.00	146	10.36	SA	1	1	In	225	2600	SL	265	2600	...	...	100/130	D	474	1.89	1-Ben	PI	Scin	Ecl	EM	40.90	26.44	33.62	...	...
E-225-4	267	Hor	Air	6-5x4	471.0	7.00	143	...	SA	1	1	In	225	2650	SL	225	2650	175	2400	80	D	347	1.54	1-Ben	PI	Scin	DR	EM	37.73	30.77	33.62	...	...
O-300-A, O-300-B	253	Hor	Air	6-4⅛x3⅞	301.0	7.00	141	N	SA	1	1	In	145	2700	SL	145	2700	...	...	80	D	277	1.91	1-MS	FL	Scin	DR	EM	46.66	22.30	33.41	...	...
GSO-526	...	Hor	Air	6-5½x4½	526.0	6.00	151	12.00	SA	1	1	In	300	3000	SL	320	3000	...	...	91/96	.6880	540	1.80	1-Ben	PI	Scin	DR	EM	35.38	23.25	31.50	...	...
GO-526	...	Hor	Air	6-5½x4½	526.0	7.00	148	N	SA	1	1	In	255	2600	SL	290	3200	...	...	80	.6880	408	1.60	1-Ben	PI	Scin	DR	EM	52.26	23.96	34.66	...	...
O-526	...	Hor	Air	6-5½x4½	526.0	7.00	147	N	SA	1	1	In	225	2300	SL	225	2300	...	...	80	D	428	1.90	1-MS	FL	Scin	DR	EM	49.12	23.00	34.66	...	...
O-470-J	273	Hor	Air	6-5x4	471.0	7.00	165	N	SA	1	1	In	225	2550	SL	250	2600	...	...	80	D	381	1.62	1-MS	FL	Scin	DR	EM	36.03	27.75	34.64	...	...
O-470-K, O-470-L	273	Hor	Air	6-5x4	471.0	7.00	149	N	SA	1	1	In	230	2600	SL	230	2600	...	...	80	D	404	1.76	1-MS	FL	Scin	DR	EM	36.03	27.75	32.32	...	...
O-470-M	273	Hor	Air	6-5x4	471.0	8.00	156	N	SA	1	1	In	240	2600	SL	240	2600	...	...	91/96	D	409	1.70	1-BM	FL	Scin	DR	EM	36.03	27.75	33.56	...	...
FSO-526	N	Hor	Air	6-5½x4½	526.0	6.00	131	10.04	NA	1	1	In	260	3000	10000	260	3000	N	N	91/96	N	568	2.18	1-Ben	PI	Scin	DR	EM	43.31	19.62	33.56	...	...
O-470-G	N	Hor	Air	6-5x4	470.0	8.00	156	N	NA	1	1	In	240	2600	SL	240	2600	N	N	91/96	N	432	1.80	1-Ben	PI	Scin	DR	EM	37.56	26.69	33.56	N	N
Franklin 4A4-100-B3	239	Hor	Air	4-4½x3½	225.0	7.00	136	N	AC	1	1	In	100	2600	SL	...	...	75	2370	80	D	214	2.14	1-MS	FL	Eis	AL	EM	30.68	20.89	30.81	12 1/2	...
6A4-150-B3	238	Hor	Air	6-4½x3½	335.0	7.00	136	N	AC	1	1	In	150	2600	SL	...	...	113	2370	80	D	291	1.94	1-MS	FL	Eis	DR	EM	37.37	22.58	30.81	13 1/2	...
6V4-178-B3	244	Ver	Air	6-4½x3½	335.0	7.00	140	N	AC	1	1	In	178	3000	SL	...	...	...	...	80	D	294	1.65	1-MS	FL	Scin	DR	EM	36.00	28.31	30.81	...	...
6A4-185-B3	238	Hor	Air	6-4½x3½	335.0	7.00	139	N	AC	1	1	In	185	2800	SL	...	...	124	2550	80	D	307	1.86	1-MS	PI	Scin	DR	EM	37.37	25.31	30.81	13 1/2	...
6V4-200-C32, C33	244	Ver	Air	6-4½x3½	335.0	8.50	152	N	AC	1	1	In	200	3100	SL	...	...	...	...	91	D	306	1.53	1-BM	P-FL	Scin	DR	EM	26.81	36.00	30.81	...	...
6AG4-190-B13	238	Hor	Air	6-4½x3½	335.0	7.60	141	N	AC	1	1	Ib	190	3100	SL	...	...	...	...	80	.6320	324	1.11	1-BM	P-FL	Scin	DR	EM	40.69	26.12	30.81	...	...
6V6-245-B16F	258	Ver	Air[1]	6-4¾x4	425.0	7.50	139	N	AC	1	1	In	245	3275	SL	215	3275	184	3275	80	D	353	1.44	1-Str	PI	Eis	Opt	EM	33.62	29.93	33.28	...	...
Jacobs R-755A	237	Rad	Air	7-5¼x5	757.0	6.00	143	N	SA	1	1	In	300	2200	SL	300	2200	178	1900	80	D	505	1.68	1-Str	FL	Scin	Ecl	EM	39.50	44.00	...	...	16.50
R-755B	237	Rad	Air	7-5¼x5	757.0	6.00	131	N	SA	1	1	In	275	2200	SL	275	2200	160	1900	80	D	480	1.72	1-Str	FL	Scin	Ecl	EM	39.50	44.00	...	...	16.50
R-755EH[2]	...	Rad	Air	7-5¼x5	757.0	6.50	146	N	SA	1	1	In	350	2500	SL	350	2500	200	2000	91	.6490	600	1.71	1-Str	FL	Scin	Ecl	EM	39.50	44.00	...	...	16.50
R-755-9	121	Rad	Air	7-5¼x5	757.0	5.40	117	N	SA	1	1	In	225	2000	SL	245	2200	160	1900	80	D	471	2.09	1-Str	FL	Scin	Ecl	EM	39.50	44.00	...	...	16.50
Lycoming O-235-C1	223	Hor	Air	4-4⅝x3⅞	233.3	6.75	141	N	SA	1	1	In	108	2600	SL	115	2800	81	2360	80	D	207	1.92	1-MS	FL	Scin	DR	EM	29.56	22.53	32.00	...	...
O-290-D2B[3]	229	Hor	Air	4-4⅞x3½	289.0	7.00	137	N	SA	1	1	In	135	2600	SL	140	2800	100	2350	80/87	D	236	1.75	1-MS	FL	Scin	DR	EM	29.56	22.81	32.24	...	(a)
O-320[3]	274	Hor	Air	4-5⅛x3⅞	319.8	7.00	138	N	SA	1	1	In	150	2700	SL	150	2700	112	2450	80/87	D	244	1.62	1-MS	FL	Scin	DR	EM	29.40	23.12	32.24	...	(a)
O-340-A1A	277	Hor	Air	4-5⅛x3⅜	340.4	8.40	146	N	SA	1	1	In	170	2700	SL	170	2700	127	2450	91/96	D	250	1.47	1-MS	FL	Scin	DR	EM	29.56	24.66	32.55	...	(a)
O-340-B1A	277	Hor	Air	4-5⅛x4⅛	340.4	7.15	138	N	NA	1	1	In	160	2700	SL	160	2700	120	2450	80/87	D	247	1.54	1-MS	FL	Scin	DR	EM	29.56	24.66	32.55	...	(a)
O-360-A1A	266	Hor	Air	4-5⅛x4⅜	361.0	8.50	146	N	SA	1	1	In	180	2700	SL	180	2700	135	2450	91/96	D	254	1.41	1-BM	P-FL	Scin	DR	EM	29.56	24.66	33.37	...	(a)
O-360-B1A	266	Hor	Air	4-5⅛x4⅜	361.0	7.20	137	N	NA	1	1	In	168	2700	SL	168	2700	125	2450	80/87	D	251	1.32	1-MS	FL	Scin	DR	EM	29.56	24.66	33.37	...	(a)
O-435-A	226	Hor	Air	6-4⅞x3⅞	434.0	6.50	136	N	SA	1	1	In	190	2550	SL	190	2550	143	2310	80	D	364	1.91	1-MS	FL	Scin	DR	EM	38.10	29.61	32.24	...	(b)
VO-435-A1C[3]	279	Ver	Air	6-4⅞x3⅞	434.0	7.30	143	N	NA	1	1	In	250	3200	SL	260	3400	200	3200	80/87	D	396	1.58	1-MS	FL-P	Scin	Opt	EH	34.73	25.19	33.32	...	...
VO-435-A1D[3]	279	Ver	Air	6-4⅞x3⅞	434.0	7.30	143	N	NA	1	1	In	250	3200	SL	260	3400	200	3200	80/87	D	390	1.56	1-MS	FL-P	Scin	Opt	EH	34.73	25.18	33.32	...	...
GO-435-C2B2	226	Hor	Air	6-4⅞x3⅞	434.0	7.30	146	N	NA	1	1	In	240	3000	SL	260	3400	180	2750	80/87	.6420	430	1.79	1-BM	P-FL	Scin	Opt	EM	38.64	28.02	33.12	...	(c)
GO-480-B1A6	275	Hor	Air	6-5⅛x3⅞	479.7	7.30	143	N	NA	1	1	In	260	3000	SL	270	3400	195	2750	80/87	.6420	432	1.66	1-Str	PI	Scin	Opt	EM	38.64	28.02	33.12	...	(c)
GO-480-B1D	275	Hor	Air	6-5⅛x3⅞	479.7	7.30	143	N	NA	1	1	In	260	3000	SL	270	3400	195	2750	80/87	.6420	432	1.66	1-Str	PI	Scin	Opt	EM	38.64	28.02	33.12	...	(c)
GO-480-C1B6	275	Hor	Air	6-5⅛x3⅞	479.7	8.70	154	N	SA	1	1	In	280	3000	SL	295	3400	210	2750	100/130	.6420	458	1.64	1-Str	PI	Scin	Opt	EM	38.64	29.40	33.12	...	(c)
GO-480-C1D6	275	Hor	Air	6-5⅛x3⅞	479.7	8.70	154	N	NA	1	1	In	280	3000	SL	295	3400	210	2750	100/130	.6420	438	1.56	1-Str	PI	Scin	Opt	EM	38.64	28.02	33.12	...	(c)
GO-480-C2D6	275	Hor	Air	6-5⅛x3⅞	479.7	8.70	152	N	NA	1	1	In	285	3100	SL	295	3400	210	2750	100/130	.6420	442	1.55	1-Str	PI	Scin	Opt	EM	40.69	28.02	33.12	...	(c)
GO-480-D1A	275	Hor	Air	6-5⅛x3⅞	479.7	7.30	143	N	SA	1	1	In	260	3000	SL	275	3400	195	2750	80/87	.6420	454	1.75	1-Str	PI	Scin	Opt	EM	40.29	27.46	33.12	...	(c)
GO-480-F1A6	275	Hor	Air	6-5⅛x3⅞	479.7	7.30	142	N	NA	1	1	In	265	3100	SL	275	3400	210	2750	80/87	.6420	436	1.65	1-Str	PI	Scin	Opt	EM	40.69	28.02	33.12	...	(c)

	GSO-480-A1A6	284	Hor	Air	6-5½x3½	479.7	7.30	154	11.27	SA	1	1	In	320	3200	8000	340	3400	225	2750	100/130	.6420	500	1.79	1-Str	PI	Scin	Opt	EM	46.22	22.73	33.12			(c)
	SO-580-A1B	285	Hor	Air	6-4½x3½	578.0	7.30	160	7.91	NA	1	1	In	350	3000	6000	400	3300	280	3000	100/130	D	578	1.65	1-Str	PI	Scin	Opt	EM	46.67	24.49	33.12			(c)
	VSO-580-A1A[3]	285	Ver	Air	6-4½x3½	578.0	7.30	160	7.91	SA	1	1	In	350	3000	6000	400	3300	280	3000	100/130	D	574	1.64	1-Str	PI	Scin	Opt	EM	49.20	30.75	33.18				
	GSO-580-D	256	Hor	Air	6-4½x3½	578.0	7.30	160	7.91	SA	1	1	In	350	3000	5000	400	3300	280	2750	100/130	.6420	608	1.73	1-Str	PI	Scin	Opt	EM	56.86	34.22	33.18			(c)
Pratt & Whitney	D5	230	Rad	Air	14-5⅝x5½	2004.0	6.70	186	N	SD	1	1	In	1200	2550	6400	1450	2700			100/130	.5000	1585	1.32	1-Str	PI	Scin			59.66	49.10					
	2SD13-G	230	Rad	Air	14-5¾x5½	2004.0	6.70	186		SD	1	1	In	1200	2550	5000	1450	2700			100/130	.5000	1605	1.34	1-Str	PI	Scin			59.66	49.10					
			(2-Sp	eed B	lower Engin	e)		170						1100		14000								1.46												
	CB3	264	Rad	Air	18-5¾x6	2804.0	6.70	196	N	SD	1	1	In	1800	2600	8500	2050	2700	1800	2600	100/130	.4500	2357	1.31	1-Str	PI	Scin			81.40	52.80					
			(With	Wat	er Injection)												2400	2800																		
	CB4	264	Rad	Air	18-5¾x6	2804.0	6.70	196	N	SD	1	1	In	1800	2600	8500	2200	2800	1900	2600	108/135	.4500	2357	1.31	1-Str	PI	Scin			81.40	52.80					
			(With	Wat	er Injection)												2500																			
	CB16	264	Rad	Air	18-5¾x6	2804.0	6.70	196		SD	1	1	In	1800	2600	8500	2050[4]	2700[4]	1800	2600	100/130	.4500	2390	1.33	1-Str	PI	Scin			81.40	52.80					
			(2-Sp	eed B	lower Engin	e)		174						1600		16000	1850[6]	2600[6]	1700					1.49												
	CB17	264	Rad	Air	18-5¾x6	2804.0	6.70	196		SD	1	1	In	1800	2600	8500	2200[7]	2800	1900	2600	108/135	.4500	2390	1.33	1-Str	PI	Scin			81.40	52.80					
			(2-Sp	eed B	lower Engin	e)		185						1700		14500	1900[6]	2600[6]	1750					1.41												
Wright	957C7BA1	261	Rad	Air	7-6½x6	1301.0	6.20	178	7.21	SA	1	1	In	700	2400	7300	800	2600	490	2200	91/96	.5625	1065	1.52	1-Str	PI	Boe	Opt	EM	48.10	50.45				32.75	
	968C9HE1	259	Rad	Air	9-6½x6	1823.0	6.80	222	7.21	SA	1	1	In	1275	2500	3500	1475	2800	890	2400	100/130	.5625	1390	1.09	1-Str	PI	Boe	Opt	EM	48.50	54.95				32.75	
	975C18CB1	270	Rad	Air	18-6½x5	3350.0	6.70	218	6.46	SA	1	1	In	2400	2600	5300	2800	2900	1600	2400	115/145	.4375	3065	1.28	1-Str	PI	Scin	Opt	EM	78.47	56.59				40.75	
			(2-Sp	eed B	lower Engin	e)		182	6.67					2000		16000			1500					1.53												
	972TC18DA1	272	Rad	Air	18-6½x6	3350.0	6.70	240	6.46	SA	1	1	In	2650	2600	6500	3250	2900	1910	2400	115/145	.4375	3551	1.34	1-Str	PI	Scin	Opt	EM	89.53	56.59				41.80	
			(2-Sp	eed B	lower Engin	e)		222	6.67					2450		17900	2550	2600	1800					1.45												
	DA2	272	Rad	Air	18-6½x6	3350.0	6.70	240	6.46	SA	1	1	In	2650	2600	6500	3250	2900	1910	2400	115/145	.4375	3543	1.34	1-Str	PI	Scin	Opt	EM	89.53	56.59				41.80	
			(2-Sp	eed B	lower Engin	e)		222	6.67					2450		17900	2550	2600	1800					1.45												
	DA3	272	Rad	Air	18-6½x6	3350.0	6.70	249	6.46	SA	1	1	In	2750	2600	5800	3250	2900	1910	2400	115/145	.4375	3557	1.29	1-Str	PI	Scin	Opt	EM	89.52	56.59				41.80	
			(2-Sp	eed B	lower Engin	e)		222	6.67					2450		17900	2550	2600	1800					1.45												
	DA4	272	Rad	Air	18-6½x6	3350.0	6.70	249	6.46	SA	1	1	In	2750	2600	5800	3250	2900	1910	2400	115/145	.4375	3549	1.29	1-Str	PI	Scin	Opt	EM	89.52	56.59				41.80	
			(2-Sp	eed B	lower Engin	e)		222	6.67					2450		17900	2550	2600	1800					1.45												
	982C9HE1		Rad	Air	9-6½x6	1823.0	6.80	222	7.21	SA	1	1	In	1275	2500	3400	1525[6]	2800	890	2400	115/145	.5625	1458	1.15	1-Str	FL	Scin	Opt	EM	50.07	55.75				32.75	
	749C18BD1		Rad	Air	18-6½x6	3350.0	6.50	211	6.67	SA	1	1	In	1800	2400	16000	1900	2600	1400	2400	100/130	.4375	2915	1.62	1-Str	PI	Scin	Opt	EM	78.52	55.62					
			(2-Sp	eed B	lower Engin	e)		207	6.46					2100		4400	2500	2800	1470					1.39												
	745C18BA3		Rad	Air	18-6½x6	3350.0	6.50	181	6.67	SA	1	1	In	1800	2400	15000	1900	2600	1400	2300	100/130	.4375	2760	1.54	1-Str		Scin	Opt	EM	76.26	55.76					
			(2-Sp	eed B	lower Engin	e)		197	6.46					2000		4800	2200	2800						1.39												
	988TC18EA1, EA3	267	Rad	Air	18-6½x6	3350.0	6.70	259	6.46	SA	1	1	In	2850	2600	4700	3400	2900	1910	2400	115/145	.4375	3645	1.26	1-Str	PI	Scin	Opt	EM	99.52	56.59				41.80	
			(2-Sp	eed B	lower Engin	e)		222	6.67					2450		16400	2550	2600	1800					1.49												
	988TC18EA2	267	Rad	Air	18-6½x6	3350.0	6.70	259	6.46	SA	1	1	In	2920	2650	4800	3400	2900	1910	2400	115/145	.3580	3745	1.28	1-Str	PI	Scin	Opt	EM	89.52	56.59				41.80	
			(2-Sp	eed B	lower Engin	e)		222	6.67					2450	2600	16400	2550	2600	1800					1.53												
	988TC18EA5	287	Rad	Air	18-6½x6	3350.0	6.70	259	6.46	SA	1	1	In	2920	2650	4800	3400	2900	1910	2400	115/145	.3580	3775	1.29	1-Str	PI	Scin	Opt	EM	89.52	56.59				41.80	
			(2-Sp	eed B	lower Engin	e)		222	6.67					2450	2600	16400	2550	2600	1800					1.54												
	988TC18EA4, EA6		Rad	Air	18-6½x6	3350.0	6.70	259	6.46	SA	1	1	In	2920	2650	4800	3400	2900	1975	2500	115/145	.4375	3675	1.26	1-Str	PI	Scin	Opt	EM	89.52	56.59				41.80	
			(2-Sp	eed B	lower Engin	e)		222	6.67					2450	2600	16400	2550	2600	1950					1.50												

ABBREVIATIONS

1—Cooled by fan.
2—Helicopter engine with vertical crankshaft.
3—Certificated for helicopter application.
4—2400 with water injection.
5—2800 with water injection.
6—With water injection.
7—2500 with water injection.
(a)—A rear type mounting is provided by four mounting bosses integral with the crankcase.
(b)—A rear type mounting is provided by five mounting bosses, four of which are integral with the crankcase sections and the remaining boss is located at the rear of the oil pump.
(c)—A longitudinal type mounting is provided by four mounting bosses integral with the crankcase.
AC—Aluminum with cast iron sleeves.
AL—Electric Auto-Lite Co.
Ben—Bendix Aviation Corp.
BM—Bendix or Marvel-Schebler.
Boe—American Bosch Corp.
D—Direct.
DR—Delco-Remy Div.
Ecl—Eclipse Pioneer Div.
EH—Electric motor and hand crank.
Eis—Eiseman Corp.
EM—Electric motor.
FL—Float.
FL-P—Float, pressure compensated.
Hor—Horizontally opposed.
In—In head with push rods and rocker arms.
MS—Marvel-Schebler Carburetor Div.
N—No or none.
Ni—Nickel iron with aluminum head.
Opt—Optional.
P-FL—Pressure injection or float.
PI—Pressure injection.
Rad—Radial.
SA—Steel with aluminum head.
Scin—Scintilla Magneto Div.
SD—Steel and Dural.
SL—Sea level.
Str—Stromberg-Elmira Div.
Ver—Vertically opposed.

For Directory of the Engine Manufacturers listed above, see Table of Contents

Value of Shipments of Aircraft Propellers and Other Products of Their Plants

Based on data from Industry Division, Bureau of the Census

	Value of All Products	Total	Aircraft Propellers and Parts						Other Products and Services	Shipments of Propellers for Civil Aircraft
			For Military Aircraft			For Civilian Aircraft				
			Total	Propellers	Parts	Total	Propellers	Parts		
1956	$185,798,000	$118,988,000	$87,211,000	$40,059,000	$47,152,000	$31,777,000	$17,723,000	$14,054,000	$66,810,000	$12,957
1955	160,531,000	120,034,000	101,907,000	51,127,000	50,780,000	18,127,000	9,313,000	8,814,000	40,497,000	12,611
1954	180,678,000	157,558,000	139,068,000	65,909,000	73,157,000	18,492,000	9,645,000	8,847,000	33,020,000	9,282
1953	213,425,000	188,020,000	168,845,000	100,043,000	68,802,000	19,184,000	10,659,000	8,525,000	25,396,000	9,941
1952	155,348,000	139,344,000	119,746,000	(d)	(d)	19,598,000	10,951,000	8,647,000	16,004,000	10,951
1951	113,104,000	100,089,000	81,195,000	(d)	(d)	18,894,000	9,861,000	9,033,000	13,015,000	10,504

(d)—Not shown separately to avoid disclosing figures of individual companies.

AIRCRAFT GAS TURBINES \ 1957

U. S., BRITISH AND FRENCH

Line Number	MAKE AND MODEL	ENGINE TYPE: Turbo-jet or Prop.	ENGINE TYPE: Single or Coupled	PERFORMANCE: TAKE-OFF: Thrust (Lb.)	TAKE-OFF: Prop. Shaft (Hp.)	TAKE-OFF: RPM	TAKE-OFF: Fuel Consumption	NORMAL: Thrust (Lb.)	NORMAL: Prop. Shaft (Hp.)	NORMAL: RPM	NORMAL: Fuel Consumption	MAX. CRUISING: Thrust (Lb.)	MAX. CRUISING: Prop. Shaft (Hp.)	MAX. CRUISING: RPM	MAX. CRUISING: Fuel Consumption	Propeller Gearing Type	COMPRESSOR: Type	COMPRESSOR: No. of Stages	COMPRESSOR: Pressure Comp. Ratio	COMPRESSOR: Blade Rest	TURBINE: No. of Stages	TURBINE: Blade Rests
	UNITED STATES																					
1	Allison J33-A-18A	TJ	S	4600	N	.....	1.14‡	3900	N	.....	1.12‡	.....	N	.....	.....	N	Ce	DI	4.35	In	.....	.....
2	J33-A-35	TJ	S	4600	N	.....	1.14‡	3900	N	.....	1.12‡	.....	N	.....	.....	N	Ce	DI	4.35	In	.....	.....
3	J33-A-37	TJ	S	4600	N	.....	1.14‡	.....	N	.....	.....	.....	N	.....	.....	N	Ce	DI	4.35	In	.....	.....
4	J71-A-2	TJ	S	10000	N	.....	.....	.....	N	.....	.....	.....	N	.....	.....	N	A	.....	.....	.....	.....	.....
5	J71-A-11	TJ	S	10000	N	.....	.....	.....	N	.....	.....	.....	N	.....	.....	N	A	.....	.....	.....	.....	.....
6	T56-A-1	TP	S	726	3460	13820	0.54†	702	3094	13820	0.55†	170	1800	13820	0.43†	P	A	14	9.25	FT	.....	.....
7	501-D13	TP	S	726	3460	13820	0.54[a]	702	3094	13820	0.56[a]	145	1820	13820	0.46[a]	P	A	14	9.25	FT	.....	.....
8	Boeing 502-10	TP	S	.....	270	37500	1.00	.....	240	36500	2.05	.....	.....	.....	.....	P	Ce	1	4.10	In	2	W
9	502-11	AS	S	.....	.....	.....	.....	.....	205[b]	36500	1.17[b]	.....	.....	.....	.....	.....	Ce	1	4.10	In	2	W
10	500-10	TJ	.....	248	.....	.....	1.12‡	235	.....	.....	1.12‡	.....	.....	.....	.....	.....	Ce	1	4.10	In	.....	.....
11	Continental XT-51-T-1 (Art. I)	TP	S	.....	280	35000	.97†	.....	260	35000	1.07	.....	.....	.....	.....	SpG	Ce	1	3.90	In	2	In
12	XT-51-T-3 (Artouste II)	TP	S	.....	425	34800	.98†	.....	.....	.....	.....	.....	.....	.....	.....	SpG	Ce	1	3.95	In	2	In
13	Model 320 (Palas)	TJ	.....	350	.....	34000	1.18‡	290	.....	31500	1.10	.....	.....	.....	.....	.....	Ce	1	3.90	In	1	In
14	Model 420 (Aspin II)	DuF	S	790	.....	34500	.55‡	660	.....	34500	0.53	.....	.....	.....	.....	.....	Ce	1	3.90	In	2	In
15	J69-T-9	TJ	.....	920	.....	22700	1.13‡	725	.....	21000	1.06‡	.....	.....	.....	.....	.....	Ce	1	4.00	In	1	In
16	J69-T-19A	TJ	.....	1000	.....	21250	1.27‡	795	.....	20000	1.25‡	.....	.....	.....	.....	.....	Ce	1	3.70	In	1	In
17	140	Ac	.....	.....	185	35000	1.40†	.....	165	35000	1.40†	.....	.....	.....	.....	.....	Ce	1	4.00	In	.....	.....
18	141	Ac	.....	.....	191[b]	34500	2.87[a]	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ce	1	4.00	In	2	.....
19	215 (Artouste II)	TP	.....	.....	590	6000	.74‡	.....	490	.....	.....	.....	.....	.....	.....	.....	Ce	1	5.70	In	3	.....
20	324 (Arbizon)	TJ	.....	550	.....	34500	1.12‡	435	.....	32500	1.08‡	.....	.....	.....	.....	.....	Ce	2	5.00	.....	2	.....
21	352-A (J69-T-23)	TJ	.....	1250	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	385 (Gabizo)	TJ	.....	2200	.....	16750	1.07‡	1/50	.....	15675	1.05‡	.....	.....	.....	.....	.....	Ce	2	5.00	.....	1	.....
23	Fairchild J44-R-20B	TJ	S	1000	N	15780	1.55‡	1000	N	15780	1.55‡	.....	.....	.....	.....	N	MF	1	2.70	In	1	M
24	J44-R-3	TJ	S	1000	N	15780	1.55‡	900	N	15100	1.60‡	.....	.....	.....	.....	N	MF	1	2.70	In	1	W
25	General Electric J-47-25, 25A	TJ	S	5970*	.....	7950	1.06‡	4765	.....	7360	1.01‡	3990	.....	6960	1.01‡	.....	A	12	5.35	Do	1	FT
26	J73-3	TJ	S	8920	.....	7950	.92‡	7850	.....	7640	.89	5320	.....	7000	.87	.....	A	12	7.50	Do	2	FT
27	J-79	.....	.....	.....	.....	.....	.....	.....	Data	Restricted	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Pratt & Whitney T34	TP	S	.....	6000	.....	.62†	.....	.....	.....	.....	.....	.....	.....	.....	.....	A	13	.....	.....	3	.....
29	J57	TJ	S	10000	.....	.....	.....	.....	Data	Restricted	.....	.....	.....	.....	.....	.....	A	.....	.....	.....	.....	.....
30	JT-7H	TJ	S	7250	.....	.....	1.14‡	5800	.....	.....	1.12‡	3750	.....	.....	1.14‡	.....	Ce	1	.....	.....	1	.....
31	PT2G-4	TP	.....	1250	6000	1000	.63†	1125	5200	977	0.66†	1000	4200	955	0.70†	.....	A	.....	.....	.....	.....	.....
32	J-48, J-52, J-75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	Westinghouse J34-WE-36	TJ	.....	3400	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A	.....	.....	Ba	.....	.....
34	J54-WE-2	TJ	.....	6000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A	.....	.....	.....	.....	.....
35	XJ-81	TJ	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A	.....	.....	.....	.....	.....
36	Wright J-65	TJ	S	7220	N	6300	.92‡	6400	N	6000	.....	.....	N	.....	.....	N	A	13	.....	FT	2	FT
37	J-67	TJ	.....	.....	.....	.....	.....	.....	Data	Restricted	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	YT49-W-1	TP	.....	.....	.....	.....	.....	.....	Data	Restricted	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	GREAT BRITAIN																					
39	Armstrong Siddely M'ba ASM6	TP	S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	.....	.....	.....	.....
40	Double Mamba ASMD3	TP	C	960	.....	25000	.72‡	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Double Mamba ASMD4	TP	C	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	Sapphire ASSa6	TJ	S	8100	N	8600	.90	.....	.....	.....	.....	.....	.....	.....	.85	N	A	13	.....	Do	2	FT
43	Sapphire ASSa7	TJ	S	10500	N	8600	.89	.....	.....	.....	.....	.....	.....	.....	.....	N	A	.....	.....	.....	.....	.....
44	Viper ASV7R	TJ	S	2280	N	13400	2.31‡	885	N	13400	1.17‡	.....	.....	.....	.....	N	A	7	3.70	CL	1	FT
45	Mamba ASM6	.....	.....	.....	1650	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
46	Sapphire SA12	TJ	.....	8800	.....	8600	.90‡	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
47	Viper ASV8	TJ	.....	1750	.....	13800	1.11‡	1620	.....	13500	.....	1450	.....	13100	.....	.....	A	7	3.70	In	.....	.....
48	Viper ASV10	TJ	.....	2000	.....	13400	1.01‡	.....	.....	.....	.....	.....	.....	.....	.....	.....	A	7	.....	.....	.....	.....
49	Blackburn Palas 600	TJ	S	390	.....	35000	1.20‡	340	.....	33000	1.14‡	365	.....	34000	1.17‡	.....	Ce	1	4.12	In	1	In
50	Palouste 500	AS	S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ce	1	.....	In	2	In
51	Turmo 500	TP	S	.....	335	.....	.62†	.....	295	.....	.94†	.....	.....	.....	.....	SpG	Ce	1	4.19	In	2	In
52	Turmo 600	TP	S	.....	450	.....	1.04†	.....	400	34000	1.07†	.....	.....	.....	.....	SpG	Ce	1	4.12	In	2	In
53	Coupled Turmo 600	TP	C	.....	900	.....	1.04†	.....	800	34000	1.07†	.....	854	34500	1.05†	SpG	Ce	1	4.12	In	2	In
54	Artouste 500	TP	S	.....	345	.....	.68†	.....	300	34000	.93†	.....	.....	.....	.....	SpG	Ce	1	4.19	In	2	In
55	Artouste 600	TP	S	.....	475	.....	.99†	.....	414	34000	1.03†	.....	.....	.....	.....	SpG	Ce	1	4.12	In	2	In
56	Marbore	TJ	S	883	.....	22800	1.15‡	708	.....	21000	1.07‡	.....	.....	.....	.....	.....	Ce	1	3.90	In	1	In
57	Coupled Turmo 500	.....	C	.....	676	35000	.92‡	.....	586	34000	.93†	.....	.....	.....	.....	SpG	Ce	1	4.19	In	.....	.....
58	Bristol 705 Proteus	TP	S	1200	3320	12000	.62†	.....	.....	.....	.....	1100	2920	11700	.64†	.....	AC	12*1	7.20	FT	4	FT
59	755	.....	S	1320	3650	12600	.62	.....	.....	.....	.....	1210	3210	12300	.64	.....	.....	.....	.....	.....	.....	.....
60	Orpheus B-DR-3	TJ	.....	4850	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A	.....	.....	.....	.....	.....
61	Olympus B-OL-6	TJ	.....	16000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A	.....	.....	FT	.....	.....
62	Orion B-ON-1	TP	.....	1950	4400	10000	.64†	1410	3900	8960	.62†	1370	3400	8960	.65†	P	A	12	10.00*	FT	.....	.....
63	de Havilland Gyron	TJ	S	15000	N	.....	.....	.....	N	.....	.....	.....	N	.....	.....	N	A	.....	.....	.....	.....	.....
64	Goblin 35	TJ	S	3500	N	10750	1.19‡	2320	N	9500	1.16‡	3000	N	10250	1.16‡	N	Ce	1	3.67	In	1	FT
65	Ghost 48, Mark 1 & 2	TJ	S	4850	N	10250	1.21‡	3440	N	9250	1.15‡	4100	N	9750	1.16‡	N	Ce	1	4.50	In	1	FT
66	Gyron Junior	TJ	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	A	.....	.....	.....	.....	.....
67	83 Mark 1	TJ	.....	8300	.....	10350	1.19‡	4480	.....	9850	1.18‡	4460	.....	9850	1.18‡	.....	Ce	1	4.70	FT	.....	.....
68	Napier Nomad 1NNm6	TP	C	226	3045	2050	.25†	145	2393	1900	.35†	.....	2050	1450	.33†	SpG	A	12	8.25	.....	.....	.....
69	Eland NEI1	TP	S	825	2690	12500	.62†	700	2070	12000	.66†	585	1665	11500	.69†	P	A	10	7.00	FT	3	FT
70	Oryx N-OR-1	TG	.....	.....	750	21900	.68†	.....	610	21000	.74†	.....	.....	.....	.....	N	A	(b)	(c)	FT	.....	.....

For abbreviations and references see pages 200 and 201

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1957 / AIRCRAFT GAS TURBINES

U. S., BRITISH AND FRENCH

Arrangement	No. Used	Material	Air Intake	No. of Pumps	No. of Emergency Pumps	Fuel Controls	Afterburning	Recommended Octane Rating of Fuel	No. Fuel Nozzles per Combustion Chamber	No. of Ignitors	Type of Igniter	Sump Capacity (Pts.)	Max. Oil Consumption (Pts./Hr.)	Starter	Generator	Governor	Vacuum Pump	Fuel Pumps	Overall Dimensions: Length (In.) With Extension Pipe	Overall Dimensions: Length (In.) Without Extension Pipe	Overall Dimensions: Max. Diameter (In.)	Dry Weight: With Component Parts (Lb.)	Dry Weight: Without Component Parts (Lb.)	Line Number
UNITED STATES																								
				1	N	M	N		1	2	Sp	24.0	1.2	Gov	Gov			Pes		84.0	49.0	1790		1
				1	N	M	N		1	2	Sp	24.0	2.2	Gov	Gov			Pes		106.0	48.0	1820		2
				1	N	M	N		1	2	Sp	24.0	2.2	Gov	Gov			Pes		156.0	48.0	1800		3
							Y												284.6		42.0	4869		4
							N												191.0		47.6	4090		5
				1	N	M	N	JP-4	1	6	Sp	Dry	3.6	Gov	Gov	Gov	Gov	Pes		145.2	40.3	1645		6
				1			N			2	Sp	Dry	3.4	FA	FA	FP		Pes		145.2	36.0	1750		7
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	12	Ne	Var	Var				41.5		24.3	330		8
Cy	1	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	12	Ne	Var	Var				50.0		28.5	375		9
Cy	2		DF	1		M	N	De,JP-4	1	2	SG	12	Ne	Var	Var	Var		Var	34.0	24.0		210		10
An	1			1		M	N	G,K,JP-4		2	Sp		0.5						31.5	23.0	20.5	215	208	11
An	1			1		M	N	G,K,JP-4		2	Sp		0.5							44.3	23.2	250	236	12
An	1			1		M	N	G,K,JP-4		2	Sp		0.5						41.6		16.0		137	13
An	1			1		M	N	G,K,JP-4		2	Sp		0.5						47.7		25.9		315	14
An	1						N	G,K,JP-4		2	Sp		0.2	Br	Br					50.5	27.0	364	333	15
An	1	NS		1		M	N	G,K,JP-4		2	Sp		0.5	Br	Br	Own		Own		43.3	22.3	349	312	16
An	1			1	N	H	N	JP-4		2	Sp	8	0.5	Eem	Eem	Own		Own	55.0	41.8	31.0	245	215	17
An	1			1	N	Pn	N	JP-3,JP-4		2	Sp		0.5[a]							44.3		247	197	18
An	1			1		M	N			2	Sp		0.5[a]							54.4	21.4	320	285	19
An	1						N			2	Sp		0.5[a]							48.6	15.9	214		20
	1			1			N	JP-4		2	Sp		0.5[a]							66.9	22.3			21
An	1			1		M	N			2	Sp		0.5[a]							82.0	26.7	570		22
An	1	SS	DF	1	N	E,M,H	N	G,JP	12	1	Sp	N	Ne	Br	Br	Ww	N	Pes	68.4	75.4	22.0	392	339	23
An	1	SS	DF	1	N	E,M,H	N	G	12	2	Sp	N	Ne	JH	N	Ww	N	Pes		90.4	24.3	416	370	24
Cy	8		DF	1	(a)	M-H	N	JP-1,3,4††	1	2	Sp		2.0[a]					..	145.0		36.8	2554		25
Cn	10		DF	2	N	M-H	N	JP-1,3,4††	1	2	Sp		2.0[a]						146.0		36.8	3650		26
											Data	Restri cted												27
An																			186.8		34.1	2550		28
																								29
								MIL-F-5161B												109.8	50.5	2080		30
								JP-4					5.0[a]						156.8		33.8	2670		31
																								32
An			DF							2	Sp		0.7[a]						120.0			1200		33
An																								34
An																								35
An	1	SS	DF	2	N	I			36	2				GE	GE	Th		Th	138.8		37.3	2696	2500	36
											Data	Restri cted												37
											Data	Restri cted												38
GREAT BRITAIN																								
																			65.8					39
								AK,De											90.7				2420	40
																								41
An			DF	1	N	ASM	N	AK	36	2	KLG			Rot		Dow		Dow	133.9	107.0	35.3		2850	42
An			DF					AK											132.0		37.4		3075	43
An		NS	DF	2	N	LU	N	AK,G	24	2	KLG			Own		LU	N	LU		65.8	28.0		550	44
																								45
																						2703		46
An	1		DF	1	N	H	N	AK	24	2	K-L	14	1.5	Rot	R-E	LU	N	LU	65.8	45.6	24.3		510	47
An																							570	48
An	1	NS	DF	1	N	M	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Pie	43.8	30.0	18.0		168	49
An	1	NS	DF	1	N	M	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Pie	44.5	33.0	18.0		206	50
An	1	NS	DF	1	N	LU	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Pie		52.2	21.5		310	51
An	1	NS	DF	1	N	M	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Pie		52.2	18.8		310	52
An	2	NS	DF	2	N	LU	N		RI	2	T	16	1.0	Rot	Rot	LU	N	Pie		54.7	37.5		602	53
An	1	NS	DF	1	N	LU	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Pie		44.0	19.5		306	54
An	1	NS	DF	1	N	LU	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Pie		44.0	19.5		306	55
An	1	NS	DF	1	N	LU	N		RI	1	T			Rot	Rot	LU	N	Pie		43.1	22.3		309	56
An	2	NS	DF	2	N	M	N		RI	2	T	16	1.0	Rot	Rot	LU	N	Pie		54.7	37.5		602	57
Cy	8	NS	DF				N			2	Sp		2	Rot				LU		100.5	39.5	2945		58
																						3000		59
An			DF				N													75.5	32.4		810	60
			DF				N						2.0						152.5	123.6	40.9			61
An			DF			E	N			2	Sp		2.0							112.3	41.3		3150	62
			DF																	154.3	48.3			63
Cy	16	NS	DF	2			N	DED2482	1	2	Sp	10	2.0	Rot	RNB	Own	Pie	LU		100.5	49.9	1630		64
Cy	10	NS	DF	2			N	K,JP-4,DED2482	1	2		14	2.4	Rot	BN	*	Pie	LU		121.0	53.0	2120		65
An			DF				Y												88.5		31.5			66
Cy	10	NS	DF	1		M	N	K,JP-4,DED2482	1	2	Sp	18	2.4	Rot	BTH			LU		121.0	53.0	2135		67
	3			1		M		AK,De,G	1				2.2	Rot						109.6	58.5		3380	68
Cy	6	NS	DF	1		M	N	DERD2486	1	2	Sp	Dry	1.0	Rot		Rtl		LU		122.0	36.1	1575		69
Cy	5	NS		1		M	N		1	2	Sp	Dry	1.0	Rot				LU	83.5		18.3	495*		70

For abbreviations and references see pages 200 and 201

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AIRCRAFT GAS

Line Number	MAKE AND MODEL	ENGINE TYPE: Turbo-jet or Prop.	ENGINE TYPE: Single or Coupled	PERFORMANCE: TAKE-OFF: Thrust (Lb.)	TAKE-OFF: Prop. Shaft (Hp.)	TAKE-OFF: RPM	TAKE-OFF: Fuel Consumption	NORMAL: Thrust (Lb.)	NORMAL: Prop. Shaft (Hp.)	NORMAL: RPM	NORMAL: Fuel Consumption	MAX. CRUISING: Thrust (Lb.)	MAX. CRUISING: Prop. Shaft (Hp.)	MAX. CRUISING: RPM	MAX. CRUISING: Fuel Consumption	Propeller Gearing Type	COMPRESSOR: Type	COMPRESSOR: No. of Stages	COMPRESSOR: Pressure Comp. Ratio	COMPRESSOR: Blade Rest	TURBINE: No. of Stages	TURBINE: Blade Rests
	GREAT BRITAIN — *concluded*																					
1	Napier—(Cont'd).Oryx N-OR-4	TG			825	22400	.66†		670	21400	.71††					N	A	(b)	(c)	FT		
2	Eland N-El-3	TP		500	2605	12500	.67†	420	2180	12000	.71††	355	1710	11500	.78†	P	A	19	7.00	FT		
3	Eland N-El-6	TP		915	3150	12500	.60†	775	2605	12000	.61††	615	2045	11500	.65†	P	A	10	7.00	FT		
4	Oryx N-Or-5	TG			950	22600	.62†		900	22400	.63††		800	21900	.66†		A	(b)	(c)	FT		
5	Gazelle N-Ga-1	Tur		260	1260	20400	.71†	230	1100	19800	.73††	200	920	19000	.77†	P	A	11	6.37	FT		
6	Gazelle N-Ga-2	Tur		325	1650	20400	.68†	270	1300	19400	.72††	230	1050	18600	.77†	P	A	11	6.37	FT		
7	Gazelle N-Ga-3	Tur		340	1800	20400	.66†	285	1450	19500	.70††	245	1200	18800	.74†	P	A	11	6.37	FT		
8	Gazelle N-Ga-4	Tur		310	2000	20400	.64†	255	1575	19400	.68††	225	1350	18800	.71†	P	A	11	6.37	FT		
9	Rolls-Royce Dart 505	TP	S	385	1400	14500	.75†					295	1120	13800	.90	P	Ce	2	5.50	In	2	FT
10	Dart Mk 506	TP	S	385	1400	14500	.73†					295	1120	13830	.87†	P	Ce	2	5.50	In	2	FT
11	Dart Mk 510	TP	S	370	1600	14500	.69†					300	1365	14000	.79†	P	Ce	2	5.50	In	2	FT
12	Dart 511	TP	S	370	1600	14500	.70†					300	1460	14200	.77†	P	Ce	2	5.50	In	2	FT
13	R-Da-7/2	TP		505	1910	15000	.66†					445	1750	14400	.74†	P	Ce	2	5.60	In	3	
14	Nene 3, 102	TJ	S	5100	N	12500	1.06‡	4860	N	12200	1.04	4090	N	11830	1.02	N	Ce	1	4.50	In	1	FT
15	Nene Mk 10	TJ	S	5100	N	12500	1.06‡	4080	N	11800	1.02‡	4660	N	12200	1.04‡	N	Ce	1	4.50			FT
16	Avon RA7	TJ	S	7500	N		.92‡		N				N			N	A	12	6.50	In	2	FT
17	Avon RA21	TJ	S	8150	N		.93‡		N				N			N	A	12	6.40	In	2	FT
18	Avon RA14	TJ	S	9500	N		.84‡		N				N			N	A					
19	Avon RA26		S	10000	N		.86‡		N				N			N	A					
20	Avon RA28		S	10000	N		.86‡		N				N			N	A					
21	Avon I	TJ	S	6500	N	7800	.88		N				N		.86	N	A	12		In	2	FT
22	Avon RA7R	TJ	S	9500	N		1.90		N				N			N	A	12		In	2	FT
23	Avon RA24, RA24R	TJ																				
24	Conway	TJ	S	13000													A					
25	Soar RSr2	TJ	S	1610			1.26‡		N								A					
26	Derwent 8	TJ	S	3600	N	14700	1.05‡		N			3090	N	14100	1.03	N	Ce	1	4.00	In	1	FT
27	Tyne R.B. 108																					
28	Nene 103	TJ	S	5400		12700	1.07†															
29	Avon RA-29	TJ	S	10500		8000						8875			.75‡		A					
30	Dart 520	TP	S	495	1700	15000	.70†					295	1720	14400	.71†	P	Ce	2	5.75	In		
31	Dart 525	TP	S	500	1800	15000	.68†					440	1650	14400	.70†	P	Ce	2	5.75	In		
32	Dart R-Da-1D	TP	S	675	2655	15000	.64†									P	Ce	2		In		
33	Tyne R-Ty-1	TP	S	1235	4695		.41†									P	A		13.00			
	FRANCE																					
34	Hispano-Suiza Verdon 350	TJ		7716		11100		6834		10800		6172		10500			Ce	2			1	
35	S.N.E.C.M.A. Atar E	TJ		7700		8400		6160		8050		5280		7850		N						
36	Atar G	TJ		9680		8400		7480		8400		5050		7850		N						
37	Veela	TJ		2640																		
38	Turbomeca Artouste II	TP			400				320									1			2	
39	Marbore II	TJ		880			1.15‡	705			1.10‡						Ce	1			1	
40	Palouste IV	TJ	Ac														Ce	1			2	

ABBREVIATIONS

‡—lb/hr/lb thrust.
‡‡—D. Eng. R.D. 2482.
†—Lb/hp/hr.
††—Mil-F-5572.
•—Lucas on Mk 1; Dowty on Mk 2.
▬—Integral with pumps.
+—Plus.
■—Lb/hr.
^—Air horse power.
♦—Lb/Air hp/hr.

(a)—Included in main pump.
(b)—12 main and 4 auxiliary.
(c)—Main, 6.00; auxiliary, 1.80.
A—Axial.
Ac—Air compressor.
AC—Axial and centrifugal.
AG—Aviation gasoline.
AK—Aviation Kerosene.
An—Annular.
AS—Air supply.
Ba—Ball.
BN—B. T. H. or Newton.
Br—Breese Corp.
C—Coupled.
Ce—Centrifugal.
CL—Clamped.
Cn—Cannular.
Cy—Cylindrical.
De—Diesel fuel.
DE—Double entry.
DF—Direct flow.
DI—Dual entry.
Do—Dovetail.
Dow—Dowty.
Du F—Ducted fan.
E—Integrated electronic.
Eem—Eemco.
FA—Furnished by airframe manufacturer.
FP—Furnished by propeller manufacturer.
FT—Fir tree.
G—Gasoline

For Directory of Gas Turbine Manufacturers listed above, see Table of Contents

Value of New Orders and Net Sales Reported by Manufacturers of Complete Aircraft, Engines and Propellers

Based on data from the Industry Division, Bureau of the Census.
All Figures are in Millions of Dollars

Product	NEW ORDERS: 1956 Third Quarter	1956 Second Quarter	1956 First Quarter	1955 Yearly Totals	1954 Yearly Totals	NET SALES: 1956 Third Quarter	1956 Second Quarter	1956 First Quarter	1955 Yearly Totals	1954 Yearly Totals
Complete Aircraft and Parts										
For U. S. Military Customers	$2,127	$963	$821	$3,462	$3,655	$1,197	$1,064	$915	$4,605	$4,626
Other Customers	281	702	415	1,745	606	209	195	154	559	600
Total—Aircraft	**$2,408**	**$1,665**	**$1,236**	**$5,207**	**$4,261**	**$1,406**	**$1,259**	**$1,069**	**$5,164**	**$5,226**
Aircraft Engines and Parts										
For U. S. Military Customers	$408	$860	$454	$1,716	$725	$384	$429	$380	$1,728	$1,872
Other Customers	101	76	397	411	160	75	79	72	205	190
Total—Engines	**$509**	**$936**	**$851**	**$2,127**	**$885**	**$459**	**$508**	**$452**	**$1,933**	**$2,062**
Aircraft Propellers and Parts										
For U. S. Military Customers	$24	$33	$18	$57	$121	$21	$24	$23	$112	$151
Other Customers	10	20	14	20	31	8	9	7	22	32
Total—Propellers	**$34**	**$53**	**$32**	**$77**	**$152**	**$29**	**$33**	**$30**	**$134**	**$183**
Other Products and Services	542	503	390	1,983	1,011	428	438	388	1,239	834
Total—All Products	**$3,493**	**$3,157**	**$2,509**	**$9,394**	**$6,309**	**$2,322**	**$2,238**	**$1,939**	**$8,470**	**$8,305**

└—New orders received during quarter less terminations during quarter.

TURBINES—*concluded*

Arrangement	No. Used	Material	Air Intake	No. of Pumps	No. of Emergency Pumps	Fuel Controls	Afterburning	Recommended Octane Rating of Fuel	No. Fuel Nozzles per Combustion Chamber	No. of Igniters	Type of Igniter	Sump Capacity (Pts.)	Max. Oil Consumption (Pts./Hr.)	Starter	Generator	Governer	Vacuum Pump	Fuel Pumps	Length (In.) With Extension Pipe	Length (In.) Without Extension Pipe	Max. Diameter (In.)	Dry Weight With Component Parts (Lb.)	Dry Weight Without Component Parts (Lb.)	Line Number
GREAT BRITAIN—*concluded*																								
Cy	6	NS		1		M	N		1	2	Sp	Dry	1.0					LU	83.5		19.3	495*		1
Cy	6		DF	1	N	M-H	N	DERD2482,6	1	2	Sp	Dry	2.0	Rot		Rtl		LU		146.5	36.1	2350*		2
Cy	6		DF	1	N	M	N	DERD2482,6	1	2	Sp	Dry	2.0	Rot		Rtl		LU		122.0	36.1	1625*		3
Cy	5		DF	1	N	M	N	DERD2482,6	1	2	Sp	Dry	1.0	Rot				LU	83.5		19.3	515		4
Cy	6		RF	1	N	M-H	N	DERD2482,6	1	2	Sp	Dry	1.0	BTH				LU	70.0		33.5	780*		5
Cy	6		RF	1	N	M-H	N	DERD2482,6	1	2	Sp	Dry	1.0	BTH				LU	70.0		33.5	830*		6
Cy	6		RF	1	N	M-H	N	DERD2482,6	1	2	Sp	Dry	1.0	BTH				LU	70.0		33.5	865*		7
Cy	6		RF	1	N	M-H	N	DERD2482,6	1	2	Sp	Dry	1.0	BTH				LU	70.0		33.5	900*		8
Cy	7	NS	DF	1	N	M	N	AK	1	2	T	25	1.0	Rot	N	(a)	N	LU		95.0	38.0		1030	9
Cy	7	NS	DF	1	N	M	N	AK,JP-1,0‡‡	1	2	Sp	25	1.0	Rot	N	(a)	N	LU		95.0	38.0		1044	10
Cy	7	NS	DF	1	N	M	N	AK,JP-1,0‡‡	1	2	Sp	25	1.0	Rot	N	(a)	N	LU		97.0	38.0		1110	11
Cy	7	NS	DF	1	N	M	N	AK,JP-1,0‡‡	1	2	Sp	25	1.0	Rot	N	(a)	N	LU		97.0	38.0		1195	12
Cy	7	NS	DF	1		M	N	AK‡‡	1	2	Sp	25	1.0	Rot		(a)		LU		97.0	37.9		1250	13
Cy	9	NS	DE	2	N	M	N	AK,G	1	2	Sp	9	1.0	Rot	N	(a)	N	LU		96.8	49.5		1620	14
Cy	9	NS	DE	2	N	M	N	AK,G	1	2	Sp	11	1.0	Rot		(a)		LU		104.8	49.5		1670	15
Cy	8		DF	2	N		N	AK	1	2	Sp	16	1.0	Ple		(a)		LU		102.1	42.2		2480	16
Cy	8	NS	DF	2	N			AK	1	2	Sp	16	1.0	Ple		(a)		LU		102.1	42.2		2520	17
An			DF					AK												113.3	41.5		2860	18
An			DF					AK												113.3	41.5		2790	19
An			DF					AK												113.3	41.5		2890	20
Cy	8	NS	DF		N		N	AK	1	2	T	16	1.5	Ple	N	(a)	N	LU		103.1	42.4		2240	21
Cy	8		DF	2			Y		1	2	Sp	16	1.0	Ple		(a)		LU		120.0	42.2		2960	22
			DF																					23
An			DF					AK												128.8	41.5			24
An			DF					AK												58.9	15.8		275	25
Cy	9	NS	DE	1	N	M	N	AK,G	1	2	T	22	1.0	Rot	N	(a)	N	LU		83.1	43.0		1280	26
																								27
																								28
	8																		111.0		42.2			29
Cy	7		DF							2	HE								97.6		37.9		1250	30
Cy	7		DF							2	HE								97.6		37.9		1250	31
Cy	7		DF				N			2	HE													32
																			100.3		40.5		2023	33
FRANCE																								
	9																			104.0	50.0	2072		34
																			177.0		38.2	2040	1825	35
																			254.8		38.2	2705		36
																			89.4		26.8			37
An										2	T								41.7		21.4	243		38
An										2	T								61.9			322		39
										2	T								44.5		32.1	198		40

GD—Generator drive.
GE—General Electric.
Gl—Glow.
Gov—Government furnished equipment.
H—Hydraulic.
HE—High energy.
In—Integral.
JH—Jack & Heintz.
K—Kerosene.
K-L—KLG or Lodge.
LU—Lucas.
M—Mechanical.
MF—Mixed flow.
M-H—Mechanical and hydraulic.
N—No or none.
Ne—Negligible.
NS—Nimonic sheet.
O-R—Own or Rotox.
P—Planetary.
Pes—Pesco.
Ple—Plessey.
Pn—Pneumatic.
RF—Reverse flow.
Rl—Rotary injector.
RNB—Rotax, Newton or B. T. H.
Rot—Rotax.
R-E—Rotax or English Electric.
RF—Radial flow.
S—Single.
SG—Spark and glow.
Sp—Spark.
SpG—Spur gearing.
SP—Shaft power.
SS—Stainless steel.
T—Torch.
TG—Turbo gas generator.
Th—Thompson Products.
TJ—Turbo-jet.
TP—Turbo-prop.
Tur—Free turbine.
Var—Various.
W—Welded.
Ww—Woodward.
Y—Yes.

For Directory of Gas Turbine Manufacturers listed above, see Table of Contents

Value of Backlog of Orders Reported by Manufacturers of Complete Aircraft, Engines and Propellers

Based on data from the Industry Division, Bureau of the Census.
All Figures are in Millions of Dollars

Product	Sept. 30, 1956	June 30, 1956	Mar. 31, 1956	Dec. 31, 1955	Sept. 30, 1955	1955	1955	1954	1954
	VALUE OF BACKLOG FOR QUARTERS ENDING—								
Complete Aircraft and Parts									
For U. S. Military Customers	$9,454	$8,524	$8,623	$8,717	$8,528	$8,556	$9,190	$9,868	$9,821
Other Customers	2,796	2,724	2,217	1,956	1,128	965	777	771	665
Total—Aircraft	**$12,250**	**$11,248**	**$10,840**	**$10,673**	**$9,656**	**$9,521**	**$9,967**	**$10,639**	**$10,486**
Aircraft Engines and Parts									
For U. S. Military Customers	$3,255	$3,231	$2,804	$2,730	$2,484	$2,723	$2,503	$2,806	$3,149
Other Customers	680	654	657	331	196	168	136	123	120
Total—Aircraft Engines	**$3,935**	**$3,885**	**$3,461**	**$3,061**	**$2,680**	**$2,891**	**$2,639**	**$2,929**	**$3,269**
Aircraft Propellers and Parts									
For U. S. Military Customers	$113	$110	$101	$106	$118	$133	$149	$161	$174
Other Customers	44	42	31	24	23	19	14	26	28
Total—Aircraft Propellers	**$157**	**$152**	**$132**	**$130**	**$141**	**$152**	**$163**	**$187**	**$202**
Other Products and Services	**2,021**	**1,907**	**1,843**	**1,841**	**1,450**	**1,362**	**1,323**	**1,097**	**976**
Total—All Products	**$18,363**	**$17,192**	**$16,276**	**$15,705**	**$13,927**	**$13,926**	**$14,092**	**$14,852**	**$14,927**

Janitrol purge gas generators provide safe armorplate of gas for fuels in modern aircraft.

Janitrol Platular* heat exchangers in modular units, reduce weight and increase design freedom.

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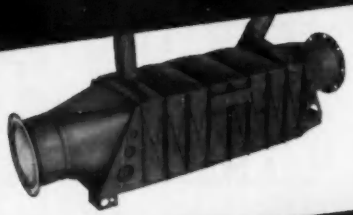

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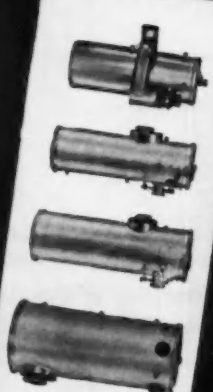

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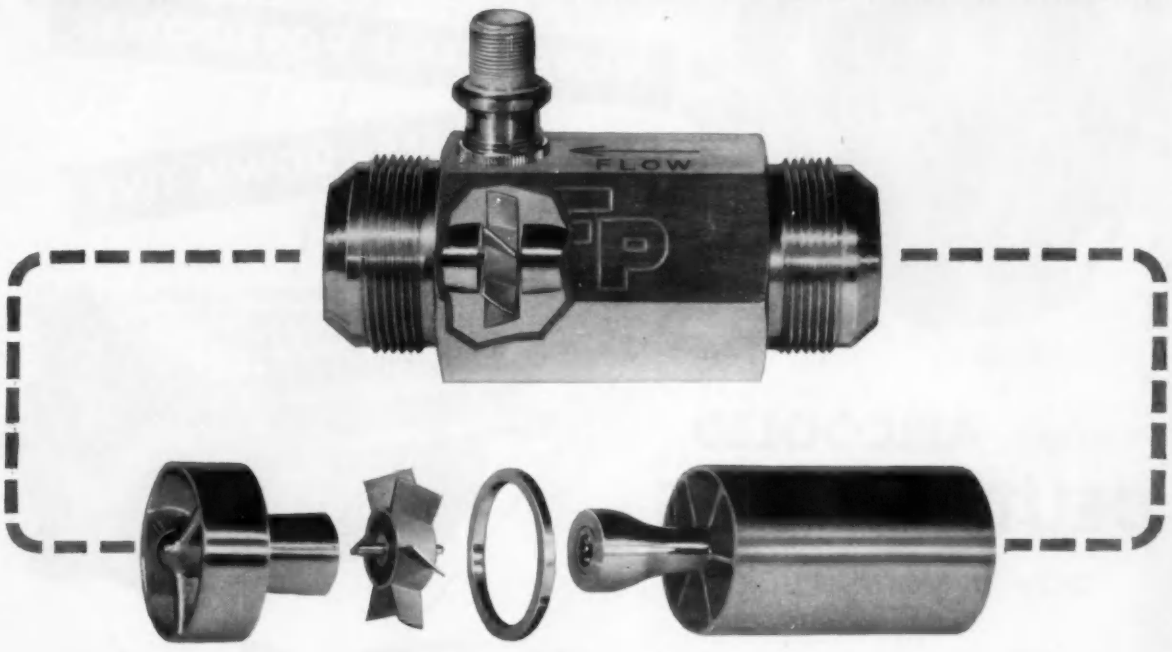

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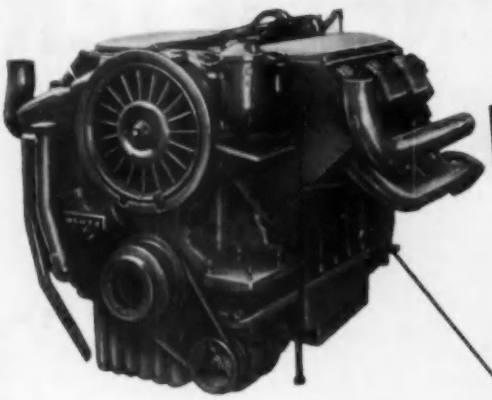

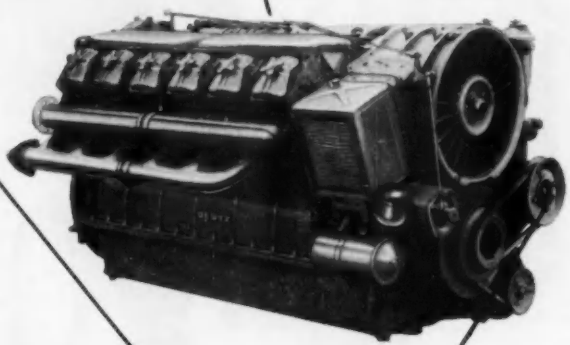

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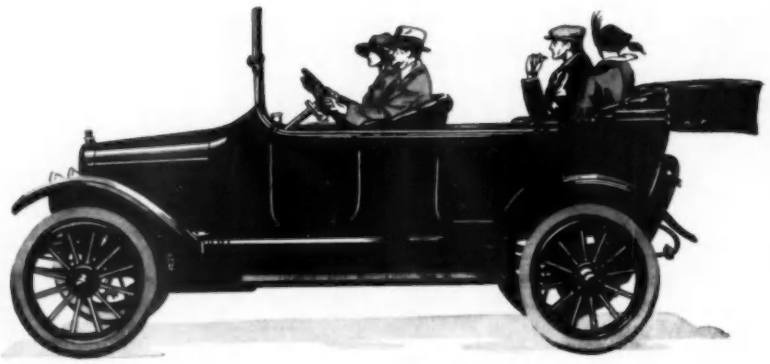

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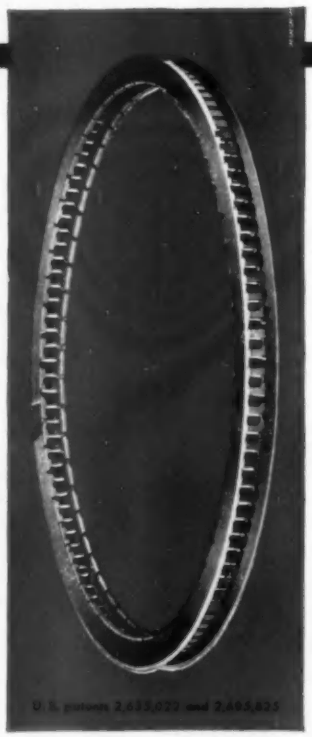

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INTERNAL COMBUSTION ENGINE PRODUCTION

EXCEPT AUTOMOTIVE AND AIRCRAFT

As reported by the Industry Division, Bureau of the Census

These data relate to engines designed primarily for use in generating power; oil and gas-field pumping; locomotives; agriculture machinery; tractors; power lawn mowers; inboard and outboard motor boats; air compressors; and similar applications.

Quantity and Value of Shipments, by Type of Engine, by Years

Type of Engine	Total Engines Produced	Shipments: No. of Engines	Shipments: Value at Plant	Used in Product of Same Co.
1955				
Gasoline	4,932,259	4,017,848	$216,130,000	914,411
Diesel	139,731	61,278	191,612,000	78,453
Outboard	514,728	514,728	101,553,000	.....
Gas	18,038	7,900	34,179,000	10,138
Total—1955	5,604,756	4,601,754	$534,474,000	1,003,002
1954				
Gasoline	3,669,905	2,993,575	$179,323,000	675,930
Diesel	104,686	48,639	172,271,000	56,047
Outboard	479,350	479,350	76,039,000	.....
Gas	10,691	6,190	25,993,000	4,501
Total—1954	4,264,232	3,527,754	$453,626,000	736,478
1953				
Gasoline	2,989,175	2,205,964	$171,289,000	783,211
Diesel	117,628	58,553	232,488,000	59,075
Outboard	467,584	467,584	67,499,000	.....
Gas	9,615	3,133	37,615,000	6,482
Dual-fuel	8,972	4,648	10,743,000	4,324
Total—1953	3,592,974	2,739,882	$519,624,000	853,092
1952				
Gasoline	2,945,050	2,225,614	$188,647,000	719,436
Diesel	120,538	63,878	184,575,000	56,060
Outboard	337,419	337,419	48,129,000	.....
Gas	8,624	3,911	47,249,000	4,713
Dual-fuel	10,177	5,248	10,847,000	4,929
Total—1952	3,421,808	2,636,070	$477,447,000	785,138

Gasoline Engine Shipments by Hp, 1955-1954

Hp Ratings	Total Engines Produced	Shipments: No. of Engines	Shipments: Value at Plant	Used in Product of Same Co.
1955				
Under 2	1,601,488	1,493,640	$ 32,100,000	107,828
2.0-2.9	2,145,048	1,806,202	45,543,000	338,846
3.0-3.9	281,800	204,580	7,787,000	87,220
4.0-5.9	213,366	128,529	8,725,000	84,857
6.0-6.9	17,978	8,345	587,000	9,633
7.0-7.9	3,047	3,047	665,000	.....
8.0-10.9	70,493	63,388	7,146,000	7,105
11-35	202,293	107,040	23,520,000	95,253
36-45	140,349	47,217	10,639,000	93,132
46-60	132,320	52,348	14,364,000	79,971
61-100	113,825	62,691	25,250,000	10,566
101-300		40,568	38,166,000	
301 and over	252	252	1,628,000	.....
Total—1955	4,932,259	4,017,848	$216,130,000	914,411
1954				
Under 2.9	2,824,569	2,498,781	$ 61,770,000	325,788
3.0-3.9	127,247	68,424	3,147,000	58,823
4.0-5.9	187,189	106,788	7,462,000	80,401
6.0-6.9	11,106	7,725	581,000	3,381
7.0-9.9	59,751	54,415	5,603,000	5,336
10-35	194,166	121,657	28,624,000	72,509
36-45	122,484	18,175	4,900,000	104,309
46-60	52,295	37,980	10,936,000	14,315
61-80	24,048	23,165	11,460,000	883
81-90	66,650	4,731	1,873,000	10,185
91-150		39,368	21,687,000	
151 and over		12,366	21,280,000	
Total—1954	3,669,505	2,993,575	$179,323,000	675,930

Outboard Engine Shipments by Hp, 1955-1954

Hp Ratings	No. of Engines	Value at Plant	Avg. Value per Engine
1955			
Under 3	11,695	$ 648,000	$ 55.24
3.0-4.9	38,799	3,493,000	90.05
5.0-5.9	95,735	12,297,000	126.08
6.0-8.9	72,424	9,761,000	134.78
9.0-10.9	47,671	9,335,000	195.82
11.0-12.9	24,543	4,292,000	174.88
13 and over	223,871	61,729,000	275.73
Total	514,728	$101,553,000	$197.29
1954			
Under 3	21,932	$ 1,327,000	$ 60.50
3.0-4.9	51,406	4,486,000	87.27
5.0-5.9	110,043	13,238,000	120.30
6.0-6.9	19,470	1,860,000	95.53
7.0-8.9	81,081	10,754,000	132.63
9.0-10.9	50,746	8,990,000	177.16
11 and over	144,672	35,384,000	244.58
Total	479,350	$ 76,039,000	$158.63

1955-1954 Diesel Engine Shipments by Hp Ratings

Hp Ratings	Total Engines Produced	Shipments: No. of Engines	Shipments: Value at Plant	Used in Product of Same Co.
1955				
Under 6	16,070	235	$ 827,000	8,772
6-10		55	87,000	
11-20		1,174	700,000	
21-30		182	314,000	
31-40		4,209	2,233,000	
41-50		1,443	1,176,000	
51-70	43,285	13,451	12,627,000	29,834
71-100	26,403	14,688	18,754,000	11,715
101-150	27,805	12,258	30,728,000	15,547
151-200	18,770	9,362	34,104,000	9,408
201-300	4,537	2,768	20,930,000	1,769
301-400	329	323	5,456,000	6
401-500	477	458	15,563,000	19
501-600	61	55	2,144,000	6
601-900	425	167	11,120,000	258
901-1,000	38	38	2,179,000	.....
1,001 and over	1,531	412	32,670,000	1,119
Total	139,731	61,278	$191,612,000	78,453
1954				
Under 6	5,661	247	$ 172,000	2,947
6-10		147	134,000	
11-20		307	355,000	
21-30		173	307,000	
31-40		1,840	1,477,000	
41-70	37,543	12,823	12,006,000	24,720
71-100	17,731	6,908	11,417,000	8,826
101-150	26,242	12,188	30,607,000	14,057
151-300	14,902	10,791	44,720,000	2,297
301-500	768	719	28,476,000	53
501 and over	2,139	506	42,600,000	1,633
Total—1954	104,686	48,639	$172,271,000	56,047

For additional data on Engine Production, see pages 220-221

Perfect Circle Corporation, Hagerstown, Indiana • The Perfect Circle Co., Ltd., 888 Don Mills Road, Don Mills, Ontario

GASOLINE ENGINES — 1957

TRUCKS • BUSES • TRACTORS

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Allis-Chalmers B-125	Tr,Ind	4-3½x3½	30-1900	28.3-1900	125.2	6.25	92-1300 (EA)	W	In	I	SII	1.43	1.31	1.28	1.03	.360	.360	.341	.341
2	W-226	Tr,Ind	4-4x4½	63.6-1800	60-1800	226.0	6.45	193-1000 (EA)	W	In	I	SII	1.69	1.50	1.50	1.32	.376	.360	.372	.372
3	4B-153	Tr,Ind	4-3½x4½	47-2400	37-2000	153.0	6.00	112-1500 (BE)	W	In	I	2112	1.50	1.28	1.37	1.12	.429	.429	.312	.312
4	4B-182	Tr,Ind	4-3½x4½	56-2400	47-2000	182.0	6.54	140- 800 (BE)	N	In	I	2112	1.50	1.28	1.37	1.12	.429	.429	.312	.312
5	6B-230	Tr,Ind	6-3½x4½	73-2400	57-2000	230.0	6.00	168-1000 (BE)	W	In	I	2112	1.50	1.28	1.37	1.12	.429	.429	.312	.312
6	6B-273	Tr,Ind	6-3½x4½	82-2400	68-2000	273.0	5.40	204-1200 (BE)	N	In	I	2112	1.50	1.28	1.37	1.12	.429	.429	.312	.312
7	HP-326	Tr,Ind	6-3½x4½	79-2400	66-1900	326.0	5.40	220-1100 (BE)	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
8	HP-351	Tr,Ind	6-3½x5½	84-2400	69-1900	351.0	5.83	232- 900 (BE)	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
9	K-428	Tr,Ind	8-4⅛x4¼	105-2400	84-1900	428.0	5.33	276-1100 (BE)	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
10	L-525	Tr,Ind	6-4⅛x5½	113-2400	95-1900	525.0	4.75	340- 900 (BE)	N	In	L	2112	1.90	1.78	1.75	1.62	.400	.400	.372	.372
11	LO-525	T,Tr,Ind	6-4⅛x5½	139-2400	114-1800	525.0	5.00	384-1200 (BE)	N	In	L	2112	1.96	1.66	1.75	1.50	.468	.468	.372	.372
12	6-MO-893	T,Ind,M	6-5⅛x6	200-2000	173-1800	893.0	5.50	670-1000 (BE)	W	In	I	2112	2.45	2.02	2.19	1.75	.540	.540	.435	.433
13	6-MO-970	T,Ind,M	6-5⅛x6½	210-1950	196-1800	970.0	5.43	750- 800 (BE)	W	In	I	2112	2.45	2.02	2.19	1.75	.540	.540	.435	.433
14	8-MO-1290	Ind	8-5⅛x6½	259-2000	235-1800	1290.0	5.43	950-1100 (BE)	W	In	I	CNS	2.45	2.02	2.19	1.75	.540	.540	.435	.433
15	‡PC-1679	Ind	8-6⅛x8¼	280-1200	258-1200	1679.0	6.00	1300- 800 (BE)	W	In	I	2112	2.71	2.53	2.50	2.28	.703	.703	.556	.558
16	‡PCG-1679	Ind	8-6⅛x8¼	280-1200	258-1200	1679.0	6.00	1300- 800 (BE)	W	In	I	2112	2.71	2.53	2.50	2.28	.703	.703	.556	.558
17	‡8PC-2305	Ind	8-6⅛x8¼	382-1200	326-1200	2505.0	6.00	1930- 750 (BE)	W	In	I	CNS	2.71	2.53	2.50	2.28	.703	.703	.556	.558
18	‡‡8PCS-2505	Ind	8-6⅛x8¼	465-1200	420-1200	2505.0	5.27	2110- 950 (BE)	W	In	I	CNS	2.71	2.53	2.50	2.28	.703	.703	.556	.558
19	Arnolt DDT	M	4-2½x3½		20.2-2800	61.0	5.80	38-2800 (EA)	N	Se	I	2142	1.13	.938					.313	.313
20	Brennan 20	Ind	4-2⅝x3½	20-3900	15-3800	50.0	7.40	34-3200 (EA)	N	Se	L	SII	1.12	1.00	.875	.875	.250	.250	.312	.312
21	Imp.	M	4-2⅝x3½	25-4000	20-4000	50.0	7.40	34-3200 (EA)	N	Se	I	SII	1.12	1.00	.875	.875	.250	.250	.312	.312
22	75	T,In	6-3½x4½	90-3500	75-3300	230.3	6.70	175-1000 (EA)	N	In	L	SII	1.50	1.50	1.37	1.25	.343	.343	.312	.312
23	Impact	M	6-3½x4½	100-3200	82-3200	230.3	8.50	184-1250	N	In	L	SII	1.50	1.37	1.37	1.25	.343	.343	.312	.312
24	CE	Ind	4-4⅛x5	54-1600	45-1600	318.0	5.00	203-1000 (EA)	N	Se	L	SII	2.00	2.00	1.87	1.87	.375	.375	.375	.375
25	E-4	M	4-4⅛x5	54-1600	45-1600	318.0	5.00	203-1000 (EA)	N	Se	L	SII	2.00	2.00	1.87	1.87	.375	.375	.375	.375
26	B-70	T,B,Tr,Ind	6-4x5½	90-2000	75-2000	415.0	4.50	278- 900 (EA)	N	Se	I	SII	2.12	2.12	2.00	2.00	.375	.375	.437	.437
27	100	M	6-4x5½	94-2000	80-2000	415.0	6.00	278- 900 (EA)	N	Se	I	SII	2.12	2.12	2.00	2.00	.375	.375	.437	.437
28	B-100	T,B,Tr,Ind	6-4⅛x5½	94-2000	80-2000	496.0	4.50	350-1200 (EA)	N	Se	I	SII	2.12	2.12	2.00	2.00	.375	.375	.437	.437
29	125	M	6-4⅛x5½	110-2200	94-2200	496.0	6.00	350-1200 (EA)	N	Se	I	SII	2.12	2.12	2.00	2.00	.375	.375	.437	.437
30	150	M	6-4⅛x5½	150-2000	130-2000	620.3	6.00	500-1200 (EA)	N	Se	I	SII	2.50	2.50	2.12	2.12	.437	.437	.500	.500
31	Chevrolet Thriftmaster	T	6-3½x3½	140-4200	123-4000	235.5	8.00	210-2000 (BE)	N	In	I	HAS	1.88	1.51	1.44	1.28	.405	.414	.341	.341
32	Thriftmaster Special	T	6-3½x3½	140-4200	120-3800	235.5	8.00	210-2000 (BE)	N	In	I	HAS	1.88	1.51	1.44	1.28	.405	.414	.341	.341
33	Jobmaster	T,B,Tr	6-3⅝x3½	148-4000	125-3800	261.0	7.80	232-2000 (BE)	N	In	I	HAS*	1.88	1.51	1.44	1.28	.405	.414	.341	.341
34	Trademaster	T,B,Tr	6-3⅝x3	155-4200	132-3800	265.0	8.00	250-2400 (BE)	N	In	I	HAS	1.72	1.51	1.59	1.32	.334	.334	.342	.341
35	Taskmaster	T,B,Tr	6-3⅞x3	160-4200	137-4000	283.0	8.00	270-2000 (BE)	N	In	I	HAS[D•]	1.72	1.51	1.59	1.32	.334	.334	.342	.341
36	Loadmaster	T,B,Tr	8-4x3½	195-4000	170-4000	322.0	7.70	310-2200 (BE)	N	In	I	HAS[D•]	1.78	1.38	1.59		.378	.377	.372	.371
37	Chris-Craft A, *B	M	4-3½x4		60-3200	132.7	6.78	108-2400 (EA)	N	In	L	2112N	1.48	1.36	1.25	1.12	.312	.312	.310	.310
38	*K	M	6-3⅛x4½		95-3200	229.7	7.21	173-1800 (EA)	N	In	L	2112N	1.61	1.39	1.25	1.25	.311	.311	.310	.310
39	*KL	M	6-3⅛x4½		105-3200	236.6	7.40	190-2200 (EA)	N	In	L	2112N	1.61	1.39	1.25	1.25	.311	.311	.310	.310
40	KFL	M	6-3⅛x4¼		131-3800	236.6	7.40	192-2800 (EA)	N	In	L	Aus	1.64		1.25		.344		.313	
41	*M	M	6-4x4¼		130-3000	320.4	7.50	239-2400 (EA)	N	In	L	2112N	1.83	1.68	1.61	1.50	.356	.356	.372	.372
42	*MCL	M	6-4x4½		175-3400	339.2	7.22	291-1800 (EA)	N	In	L	Aus	1.83	1.67	1.20	1.50	.387	.379	.375	.375
43	*WB	M	6-4¼x4¾		200-3200	404.3	6.92	354-1600 (EA)	N	In	L	2112N	1.92	1.78	1.87	1.68	.442	.442	.372	.372
44	Chrysler M-44S	M	8-3⅝x3¼		155-3800	260.0	7.80	228-3000	N	In	I	SII°	1.75	1.41	1.64	1.36	.251	.250	.372	.434
45	M-45-S-3	M	8-3⅛x3⅝		225-3800	354.0	8.20	327-2700 (EA)	N	In	I	SII°(x)	2.01	1.75	1.94	1.72	.250	.250	.373	.433
46	M-46	M	6-3¼x4⅝		95-3200	230.0	6.60	187-1400	N	In	L	SII	1.53	1.41	1.41	1.28	.379	.379	.340	.340
47	M-46S	M	6-3¼x4⅝		110-3600	230.0	7.00	190-1600	N	In	L	SII	1.53	1.41	1.41	1.28	.379	.379	.340	.340
48	M-47	M	6-3⅛x4⅝		125-3800	265.0	7.00	220-1600 (EA)	N	In	L	SII	1.72	1.53	1.44	1.38	.410	.370	.340	.340
49	M-47S	M	6-3⅛x4⅝		135-3800	265.0	7.00	225-2100 (EA)	N	In	L	SII(x)	1.72	1.53	1.44	1.38	.410	.379	.340	.434
50	M-45-SP-3	M	8-3⅛x3⅝		275-4400	354.0	8.20	340-3900 (EA)	N	In	I	SII°(x)	2.01	1.75	1.94	1.72	.250	.250	.373	.433
51	Climax R41	Ind	4-6x7	123-1200	112-1200	791.6	5.20	525- 750 (EA)	N	Se	I	Eat	2.50	2.50	2.25	2.25	.500	.500	.560	.560
52	R61	Ind	6-6x7	183-1200	165-1200	1187.4	5.20	802- 700 (EA)	N	Se	I	Eat	2.50	2.50	2.25	2.25	.500	.500	.560	.560
53	K-67	Ind	6-7x7	264-1200	250-1200	1616.0	5.20	1220- 850 (BE)	W	Se	I	Eat	2.75	2.63	2.50	2.37	.687	.687	.560	.560
54	K-75	Ind	6-7½x7	304-1200	280-1200	1855.0	5.56	1420- 850 (BE)	W	Se	I	Eat	2.75	2.63	2.50	2.37	.687	.687	.560	.560
55	V-80	Ind	8-7x7	340-1200	320-1200	2155.0	5.20	1600- 800 (BE)	W	Se	I	Eat	2.75	2.63	2.50	2.37	.687	.687	.560	.560
56	V-85	Ind	8-7½x7	390-1200	370-1200	2474.0	5.56	1875- 800 (BE)	W	Se	I	Eat	2.75	2.63	2.50	2.37	.687	.687	.560	.560
57	V-122	Ind	12-7x7	520-1200	465-1200	3232.0	5.20	2460- 750 (BE)	W	Se	I	Eat	2.75	2.63	2.50	2.37	.687	.687	.560	.560
58	V-125	Ind	12-7½x7	600-1200	545-1200	3711.0	5.56	2900- 850 (BE)	W	Se	I	Eat	2.75	2.63	2.50	2.37	.687	.687	.560	.560
59	Continental N-4062	Tr	4-2⅝x3½	26.3-3500		62.0	6.60	41-2500 (BE)	N	In	L	Op	.895	.895	.750	.750	.187	.187	.314	.312
60	N-56	Ind	4-2⅝x3½	14.2-2200		56.0	6.80	39.5-1200 (BE)	W		L	Op	1.00	.895					.315	.313
61	N-62	Ind	4-2⅝x3½	15-2200		62.0	6.46	43-1400 (BE)	N	In	L	Op	.895	.895	.750	.750	.187	.187	.314	.312
62	Y-69	Ind	4-2½x3½	21.4-2400		69.0	6.60	48-2000 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
63	Y-4069	Tr	4-2½x3½	25-3500		69.0		51-2000 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
64	Y-91	Ind	4-2⅞x3½	28.5-2400		91.0	6.60	67-1800 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
65	Y-408	C,Tr	4-3½x3½	36-3400		91.0		70-1600 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
66	E201	Ind	4-3⅝x4⅞	65.5-2400		201.0	6.30	171-1200 (BE)	W	In	I	SII	1.45	1.36	1.16	1.19	.230	.230	.341	.339
67	F244	Ind	6-3⅞x4⅞	79-2400		244.0	6.90	182-1200 (BE)	N	In	L	XCR	1.52	1.21	1.38	1.19	.329	.334	.341	.339
68	J382	Ind	4-4½x6	78-1500		382.0	5.82	283-1000 (BE)	W	In	I	SII	1.77	1.65	1.63	1.50	.249	.249	.435	.433
69	Y-112	Ind	4-3½x3½	32-2400		112.0	6.60	82-1400 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
70	F-124	Ind	4-3⅛x4¼	36.5-2400		124.0	6.30	91-1200 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.281	.281	.341	.334
71	F-4124	C,T,Tr	4-3⅛x4¼	47-3200		124.0		94-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.281	.281	.341	.336
72	G-134	Ind	4-3½x4¼	34-2000		134.0	6.60	104-1000 (BE)			I	Op								
73	F-140	Ind	4-3⅞x4¼	42-2400		140.0	6.40	108-1200 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.281	.281	.341	.337
74	F-4140	C,T,Tr	4-3⅞x4¼	52-3200		140.0		108-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.281	.281	.341	.339
75	G-157	Ind	4-3⅝x4½	40.2-2000		157.0		129-1000 (BE)	W	In	I	Op	1.32	1.20	1.18	1.09	.312	.312	.341	.339
76	F-162	Ind	4-3⅞x4½	49-2400		162.0	6.40	124-1200 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.281	.281	.341	.337
77	F-4162	C,T,Tr	4-3⅞x4½	58-3200		162.0		122-1600 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.281	.281	.341	.337
78	H-227	Ind	4-3⅝x5½	54-1800		227.0	5.85	198-1000 (BE)	W	In	I	Op	1.64	1.45	1.56	1.31	.343	.343	.437	.439
79	H-343	Ind	4-3⅝x5½	57.8-1800		243.0	5.85	211-1000 (BE)	W	In	I	Op	1.64	1.45	1.56	1.31	.343	.343	.437	.437

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

1957 / GASOLINE ENGINES

MARINE • INDUSTRIAL

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT							CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats														MAIN BEARINGS											
Angle (Deg.)	Inserts Used?	Insert Materia (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engines Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
45	N	TP	HG	Al	25	.813x2.87	4	1040	6½	29	1045	N	1.93x1.22	3	2.25x1.62	2.25x1.50	adfg	Zen	⅞	370	16⅛	31⅝	25⅝	5	1
45	E	TP	HG	Al	31	.99x3.51	4	1040	7½	42	5046	N	2.38x1.54	3	2.44x1.62	2.48x1.75	acdf	MaS	1	545	16¼	31⅞	33½	4	2
45	N	.....	HG	CI	.....	1.00x2.84	4	CS	7½	.....	1045	N	2.00x1.31	3	2.50x1.25	2.50x1.75	abcdfg	Zen	1	500	18½	26⅞	30⅛	2,3,4	3
45	N	.....	HG	CI	.....	1.00x3.09	4	CS	7¾	.....	1045	N	2.00x1.31	3	2.50x1.25	2.50x1.75	abcdfg	Zen	1¼	520	18½	26⅞	30⅛	2,3,4	4
45	N	.....	HG	CI	.....	1.00x	4	1045	7¾	.....	1045	N	2.00x1.31	7	2.50x1.25	2.50x1.75	abcdfg	Zen	1	625	18½	26⅞	38⅛	2,3,4	5
45	N	.....	HG	CI	.....	1.00x3.09	4	1045	7¾	.....	1045	N	2.00x1.31	7	2.50x1.25	2.50x1.75	abcdfg	Zen	1¼	635	18½	26⅞	38⅛	2,3,4	6
45	E	DC	HG	CI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcdg	Zen	1½	885	25¼	33⅞	39⅛	2,3,1	7
45	E	DC	HG	CI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcdg	Zen	1½	905	25¼	33⅞	39⅛	2,3,1	8
45	E	DC	HG	Al	68	1.25x3.82	4	CS	9½	68	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcdg	Zen	1½	905	25¼	30⅛	47⅞	2,3,1	9
45	E	DC	HG	CI	66	1.25x3.81	4	CS	11	66	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcdg	Zen	1½	950	25¼	33⅞	47⅞	2,3,1	10
30	E	Jad	HG	Al	68	1.25x3.81	5	AS	11	78	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcdfg	Zen	1½	1195	27⅞	38⅛	49⅛	2,3,1	11
30	E	DC	HG	CI	212	1.75x4.75	5	1040	12½	171	1045	N	3.30x2.12	7	3.89x3.00	3.89x2.25	abcdfg	Zen	2	2400	28¼	48¼	58⅛	0,1	12
30	E	DC	HG	CI	212	1.75x4.75	5	1040	12½	171	1045	N	3.30x2.12	7	3.89x3.75	3.89x2.25	abcdfg	Zen	2	2400	48¼	58⅛	58⅛	0,1	13
30	E	DC	HG	CI	212	1.75x4.75	5	1040	12½	171	1045	.....	3.30x2.12	9	3.89x2.25	3.89x2.25	abcdefg	Zen	2½	3200	32	49⅛	78	0	14
45	E	DC	HG	Ala	263	2.75x5.53	5	CS	17¾	430	1045	N	4.25x3.25	7	4.50x2.68	3.75x3.48	abcdfg	Zen(2)	2	9000	48	48⅞	86⅛	00,0	15
45	E	DC	HG	Ala	263	2.75x5.53	5	CS	17¾	430	1045	N	4.25x3.25	7	4.50x2.68	3.75x3.48	abcdfg	Ena	2	9000	48	66⅛	86⅛	00,0	16
45	E	DC	HG	Al	263	2.75x5.53	5	1035	17¾	430	1045	N	4.33x3.25	9	4.68x2.68	4.68x2.68	abcdefg	Ena	3½	11200	108¼	47⅛	74⅛	00,0	17
45	E	DC	HG	Al	263	2.75x5.53	5	1035	17¾	430	1045	N	4.33x3.25	9	4.68x2.68	4.68x2.68	abcdefg	Ena	3½	12000	112¾	47⅛	74⅛	00,0	18
.....	N	.....	SG	Al	.....	.925x.875	2	1045	6	.....	1045	.....	1.56x1.25	2	1.38x2.63	.....	d	Zen	.....	281	16	16⅝	29½	.....	19
45	N	.....	HG	Al	6	.625x2.00	3	1045	5¾	14	1045	Y	1.31x1.25	3	2.50x1.50	2.50x1.50	abcdg	Tll	¾	128	12¾	17⅝	18¼	.....	20
45	N	.....	HG	Al	6	.625x2.00	3	1045	5¾	14	1045	N	1.31x1.25	3	2.50x1.50	2.50x1.50	abcdg	Tll	1	165	12¾	17⅝	29	.....	21
45	Y	TS	Ch	Al	23	.875x2.75	4	2320	7¾	29	1045	Y	2.06x1.25	4	2.50x1.87	2.50x1.87	acdg	Str	1¼	710	18¾	22	37½	.....	22
45	E	TS	Ch	Al	23	.875x2.75	4	2320	7¾	29	1045	Y	2.06x1.25	4	2.50x1.87	2.50x1.75	acdg	Str	1¼	710	18¾	22	46½	.....	23
45	N	.....	HG	SS	80	1.17x4.00	4	1045	11	84	1045	N	2.50x2.50	3	2.50x4.25	2.50x3.50	abcdg	Str	1¼	600	21	29⅝	37½	.....	24
45	N	.....	HG	SS	72	1.17x4.00	5	1045	11	84	1045	N	2.50x2.50	3	2.50x4.25	2.50x3.50	abcdfg	Str	1¼	950	18	18	53	.....	25
45	N	.....	HG	SS	64	1.17x3.87	4	CNS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	acdg	Str	1½	800	25¾	33¾	49	.....	26
45	N	.....	HG	SS	64	1.17x3.87	4	AS	.....	.....	CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	abcdfg	Str	1½	800	19¾	24¾	65	.....	27
45	N	.....	HG	SS	76	1.25x3.87	5	CNS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	acdg	Str	1½	875	25¾	33¾	49	.....	28
45	N	.....	HG	SS	70	1.25x3.87	5	AS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x4.50	abcdfg	Str	1½	900	19¾	24¾	65	.....	29
45	N	.....	BG	SS	72	1.37x4.00	5	AS	12	80	CNS	Y	2.62x2.67	7	2.62x5.00	2.63x3.50	abcd	Str	1¾	1450	20	30	74	.....	30
(l)	N	.....	HG	Ala	25.0	.866x3.19	3	DFS	6⅛	28	SF	.....	2.31x1.25	4	2.69x1.06	2.78x1.19	abcdfgi	R-P	1½	552	21⅝	31⅛	40⅛	.....	31
(l)	N	.....	HG	Ala	25.0	.866x3.19	3	DFS	6⅛	28	SF	.....	2.31x1.25	4	2.69x1.06	2.78x1.19	abcdfgi	Car	1½	564	21⅝	31⅛	40⅛	.....	32
(l)	N	.....	HG	Ala	29.0	.927x3.38	3	DFS	6⅛	31	SF	.....	2.31x1.25	4	2.69x1.06	2.78x1.19	abcdfgi	R-P	1½	556	21⅝	31⅛	40⅛	.....	33
45	N	.....	Ch	Ala	25.0	.927x3.01	3	DFS	5⅜	19	SF	.....	2.00x1.90	5	2.30x.762	2.30x1.16	abcdfgi	R-P	1¼	528	28½	27⅞	34⅛	.....	34
45	N	.....	Ch	Ala	27.0	.927x3.01	3	DFS	5⅜	19	SF	.....	2.00x1.90	5	2.30x.762	2.30x1.16	abcdfgi	R-P‡‡	1¼	524	28½	27⅞	34⅛	.....	35
45	N	.....	Ch	Al	30.0	.940x3.40	3	DFS	6	30	SF	.....	2.25x2.00	5	2.50x1.00	2.50x1.76	abcdfgi	R-P‡‡	1¼	693	29⅝	38⅛	38⅛	.....	36
30	N	.....	HG	Alt	21	.750x2.83	3	3140	6⅜	22	DFS‡	N	1.75x1.12	3	1.98x1.62	1.98x1.37	acr	Zen	1¼	456*	24¼	22⅛	31⅜	.....	37
30	N	.....	HG	Ala	25	.875x2.92	3	1035	7	29	DFS‡	N	1.98x1.25	7	2.49x1.53	2.49x1.15	acdr	Zen	1½	626*	24¼	21⅝	40	.....	38
30	N	.....	HG	Alt	26	.875x2.92	3	1035	7	29	DFS‡	Y	1.98x1.25	7	2.49x1.53	2.49x1.15	acdr	Zen	1½	626*	25⅛	22⅛	40	.....	39
30	E	7	HG	Alt	26	.875x2.92	3	1035	7	29	DFS‡	.....	1.98x1.25	7	2.49x1.53	2.49x1.15	acdr	Zen	1½	715*	22⅝	22⅛	40	.....	40
30	N	.....	HG	Ala	36	1.00x3.52	3	1040	8	40	DFS‡	N	1.93x1.50	7	2.49x1.74	2.49x1.15	acr	Zen	1⅝	850*	26⅛	23⅛	46⅜	.....	41
30	N	.....	HG	Atn	46	1.13x3.44	4	3140	8	40	DFS‡	.....	2.00x1.50	7	2.50x1.72	2.50x1.13	acder	Zen	1⅝	940*	26⅛	23⅛	46⅛	.....	42
30	N	.....	HG	Atn	44	1.31x3.62	4	3140	8⅞	55	DFS‡	.....	2.25x1.50	7	2.62x2.21	2.62x1.43	acdr	Zen(2)	1⅝	1260*	27¼	27⅛	53⅛	.....	43
45	E	*	HG	Ala	16.2*	.859x2.89	3	MA	5⅛	21.2	1046	.....	1.94x1.81	5	2.38x1.81	2.36x1.06	acdfg	Car	.....	1660*	32½	30⅜	44⅛	.....	44
45	E	.....	SH	Al	.....	.984x3.15	3	MA	6⅝	25.2	DFS	.....	2.25x2.00	5	2.50x1.88	2.50x1.13	acdef	Car(2)	.....	1108*	32½	30¼	46⅛	N	45
45	E	CAI	HG	Alt	15.7	.859x2.75	4	MS	7⅛	30.1	DFS	Y	2.06x1.25	4	2.50x1.88	2.50x1.24	acdg	Zen	1¼	.....	22½	25⅛	43½	4	46
45	E	CAI	HG	Alt	15.7	.859x2.75	4	MS	7⅛	30.1	DFS	Y	2.06x1.25	4	2.50x1.88	2.50x1.24	acdg	Zen	1½	.....	22½	25⅛	43½	4	47
45	E	CAI	HG	Alt	25.0	.859x2.88	4	MS	7.875	32.4	DFS	Y	2.12x1.22	4	2.50x1.88	2.50x1.24	acdg	Zen	1½	.....	22½	26⅛	45⅞	4	48
45	E	CAI	HG	Alt	25.0	.859x2.88	4	MS	7.875	32.4	DFS	Y	2.12x1.22	4	2.50x1.88	2.50x1.24	acdg	Zen(2)	1½	.....	28	26⅛	45⅞	4	49
45	E	.....	SH	Al	.....	.984x3.15	3	MA	6⅝	25.2	DFS	.....	2.25x2.00	5	2.25x1.88	2.50x1.13	acdef	Car(2)	.....	.....	32½	30¼	46⅛	.....	50
45	E	Eat	HG	Al	153	1.49x5.37	4	3135	16	244	4140	N	3.00x3.50	3	3.25x3.81	3.25x4.50	acdfg	Zen	2	2300	31⅜	49½	57⅜	1,0	51
45	E	Eat	HG	Al	153	1.49x5.37	4	3135	16	244	4140	Y	3.00x3.50	4	3.25x3.81	3.25x4.50	acdfg	Zen(2)	1¾	3200	29½	51⅜	73⅛	1,0	52
45	E	Eat	HG	Al	176	2.00x5.75	5	1040	16	279	4140	N	4.00x2.88	7	4.50x3.75	4.50x3.75	abcdfg	Zen	2½	5400	33	57	77½	0	53
45	E	Eat	HG	Al	256	2.00x6.25	5	1040	16	279	4140	N	4.00x2.88	7	4.50x3.75	4.50x3.75	abcdfg	Zen	2½	5600	33	57	77½	0	54
45	E	Eat	HG	Al	176	2.00x5.75	5	3135	16	276	4140	N	4.00x5.00	5	4.50x3.75	4.50x5.50	abcdfg	Zen(2)	2	8200	51	58	72¼	00	55
45	E	Eat	HG	Al	256	2.00x6.25	5	1040	16	279	4140	N	4.00x5.00	5	4.50x3.75	4.50x5.50	abcdfg	Zen(2)	2	8400	51	58	72¼	00	56
45	E	Eat	HG	Al	176	2.00x5.75	5	3135	16	276	4140	N	4.00x5.00	7	4.50x3.75	4.50x5.50	abcdfg	Zen(4)	2	11200	51	58	95	00	57
45	E	Eat	HG	Al	256	2.38x6.25	5	1040	16	368	4140	N	4.75x5.25	7	5.50x3.75	5.50x5.00	abcdfg	Zen(4)	2	11600	51	58½	95	00	58
(h)	E	SA	HG	CI	.....	.543x1.92	3	1035	5¾	.....	DFS	N	1.50x1.02	.....	2.00x	2.00x1.25	.....	.....	.....	170	16	19	19	5	59
(h)	E	SA	HG	Al	.....	.543x1.92	3	1035	5¾	.....	DFS	N	1.50x1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60
(h)	Op	SA	HG	CI	.....	.543x1.92	3	1035	5¾	.....	DFS	N	1.50x1.00	.....	2.00x1.39	2.00x1.25	.....	Op	Op	170	16	19	19	5	61
(h)	Op	SA	HG	CI	.....	.708x2.06	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	acdgt	Op	Op	265	14⅞	22⅛	25½	5	62
(h)	Op	SA	HG	CI	.....	.703x2.06	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	acdgt	Op	Op	290	14⅞	22⅛	25½	5	63
(h)	Op	SA	HG	CI	.....	.708x2.44	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	acdgt	Op	Op	265	14⅞	22⅛	25½	5	64
(h)	Op	SA	HG	CI	.....	.703x2.44	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	acdgt	Op	Op	290	14⅞	22⅛	25½	5	65
(h)	E	SA	HG	Al	.....	1.11x3.07	4	1035	8½	.....	1046	.....	2.25x1.56	3	2.61x1.34	2.61x1.56	acdfg	Op	.....	540	.....	.....	.....	N	66
(h)	E	SA	HG	Al	.....	.859x2.88	4	1035	7⅛	.....	1045	.....	2.06x1.31	4	2.56x1.06	2.56x1.48	acd	Op	.....	.....	.....	.....	.....	4	67
(h)	E	SA	HG	Al	.....	1.50x3.72	4	1035	10½	.....	1045	.....	2.75x1.81	4	3.50x1.88	3.50x2.00	afg	Op	.....	830	.....	.....	.....	N	68
(h)	Op	SA	HG	CI	.....	.708x2.75	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.28	1.75x1.65	acdgt	Op	Op	265	14⅞	22⅛	25½	5	69
(h)	Op	SA	HG	CI	.....	.859x2.50	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	370	15¾	28½	29⅛	4	70
(h)	Op	SA	HG	CI	.....	.859x2.50	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	395	26	28½	29⅛	4,3	71
.....	E	SA	HG	Al	.....	.....	.....	1035	7	.....	DFS	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	72
(h)	Op	SA	HG	CI	.....	.859x2.88	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	370	26	28½	29⅛	4	73
(h)	Op	SA	HG	Al	.....	.859x2.68	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	385	26	28½	29⅛	4	74
(h)	Op	SA	HG	Al	.....	1.12x2.75	4	1035	7	.....	DFS	N	2.06x	3	2.37x1.53	2.37x1.68	.....	Op	Op	475	16⅛	28½	29⅛	4,3	75
(h)	Op	SA	HG	Al	.....	.859x2.87	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	370	26	28½	29⅛	8	76
(h)	Op	SA	HG	Al	.....	.859x2.87	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	395	26	28½	29⅛	4,3	77
(h)	Op	SA	HG	Al	.....	1.25x3.31	4	1035	9½	.....	DFS	N	2.50x1.18	3	2.87x1.81	2.87x2.06	acdg	Op	Op	645	19¾	33½	30½	.....	78
(h)	Op	SA	HG	Al	.....	1.25x3.18	4	1035	9½	.....	DFS	N	2.50x1.18	3	2.87x1.81	2.87x2.06	acdg	Op	Op	654	19¾	33½	30½	.....	79

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

For Directory of the Engine Manufacturers listed above, see Table of Contents

• GASOLINE ENGINES •

1957 AUTOMOTIVE

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (in.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (in.)		Min. Port Diameter (in.)		Lift (in.)		Stem Diameter (in.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
	Continental—(Cont.)																			
1	H-250	Ind	4-3⅞x5½	62-1600		260.0		226-1000 (DE)	W	In	I	Op	1.64	1.45	1.50	1.31	.343	.343	.437	.437
2	F-186	Ind	6-3x4⅜	80.5-2400		186.0		147-1200 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.296	.341	.337
3	F-6186	C,T,Tr	6-3x4⅜	77-3500		186.0	6.70	142-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.281	.341	.337
4	F-209	Ind	6-3⅛x4⅜	68-2400		209.0		165-1200 (BE)	N	In	L	Op	1.51	1.29	1.37	1.18	.296	.296	.341	.337
5	F-6209	C,T,Tr	6-3⅛x4⅜	90-3500		209.0	6.70	160-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.281	.341	.339
6	F-226	Ind	6-3⅛x4⅜	73-2400		226.0		178-1200 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.296	.341	.338
7	F-6226	C,T,Tr	6-3⅛x4⅜	98-3500		226.0	6.70	180-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.281	.341	.338
8	M-271	Ind	6-3⅝x4⅜	88.2-2800		271.0		206-1100 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.403	.481
9	M-6271	T,B,Tr	6-3⅝x4⅜	97-3000		271.0	6.70	209-1400 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.404	.482
10	M-299	Ind	6-3⅝x4⅝	92.2-2400		299.0		221-1000 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.404	.481
..	M-6299	T,B,Tr	6-3⅝x4⅝	108-3000		299.0	6.70	226-1400 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.404	.482
..	M-330	Ind	6-4x4⅝	104.4-2400		330.0		251-1100 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.343	.404	.482
13	M-6330	T,B,Tr	6-4x4⅝	125-3000		330.0	6.70	258-1400 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.404	.482
14	B-371	Ind	6-4⅛x4⅝	110-2400		371.0	6.60	288-1000 (BE)	N	In	L	Op	1.89	1.64	1.75	1.50	.359	.359	.435	.432
15	B-6371	T,B	6-4⅛x4⅝	123.5-3000		371.0	6.50	294-1400 (BE)	N	In	L	Op	1.89	1.64	1.75	1.50	.359	.359	.435	.432
16	T-6371	T	6-4⅛x4⅝	144-3000		371.0	6.40	297-1400 (BE)	N	In	I	Op	2.08	1.84	1.87	1.56	.488	.488	.437	.432
17	T-371	Ind	6-4⅛x4⅝	119-2400		371.0	6.35	288-1200 (BE)	N	In	I	Op	2.08	1.84	1.87	1.56	.488	.488	.437	.432
18	T-427	Ind	6-4⅛x4⅝	140-2400		427.0	6.35	335-1000 (BE)	N	In	I	Op	2.08	1.84	1.87	1.56	.488	.488	.437	.432
19	B-427	Ind	6-4⅛x4⅞	127-2400		427.0	6.60	322-1000 (BE)	N	In	L	Op	1.89	1.64	1.75	1.50	.359	.359	.435	.437
20	B-6427	T,B,M	6-4⅛x4⅞	142-3000		427.0	6.50	326-1200 (BE)	N	In	L	Op	1.89	1.64	1.75	1.50	.359	.359	.435	.432
21	T-6427	T	6-4⅛x4⅞	170-3000		427.0	6.40	350-1400 (BE)	N	In	I	Op	2.08	1.84	1.87	1.56	.488	.488	.437	.432
22	U-501	Ind	6-4½x5¼	100-2400		501.0		395-1200 (BE)	N	In	I	Op	2.14	1.87	2.00	1.63	.374	.374	.435	.432
23	U-6501	T,B,Ind	6-4½x5¼	178-2800		501.0	6.20	414-1200 (BE)	N	In	I	Op	2.14	1.87	2.00	1.63	.374	.374	.435	.432
24	R-513	Ind	6-4½x5⅝	164.3-2400		513.0	6.95	392-1400 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.493
25	R-6513	T,B	6-4½x5⅝	192-2800		513.0	6.00	422-1400 (BE)	N	In	I	Op	2.14	1.89	1.81	1.75	.500	.500	.500	.496
26	R-572	Ind	6-4⅝x5⅝	182.4-2400		572.0	5.97	437-1400 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.493
27	R-6572	T,B,	6-4⅝x5⅝	220-2800		572.0	6.00	464-1200 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.496
28	R-602	Ind	6-4⅞x5⅝	192-2400		602.0	6.00	460-1400 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.493
29	R-6602	T,B	6-4⅞x5⅝	232-2800		602.0	6.00	494-1200 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.496
30	S-749	Ind	6-5⅛x5½	217-2200		749.0		570-1200 (BE)	N	In	I	Op	2.39	2.14	2.25	2.00	.562	.562	.497	.495
31	S-6749	T	6-5⅛x5½	250-2800		749.0		574-1400 (BE)	N	In	I	Op	2.39	2.14	2.25	2.00	.562	.562	.497	.494
32	K-6271	T	6-3⅝x4⅜	115-3200		271.0	6.40	216-1400 (BE)	N	In	I	Op	1.99	1.64	1.78	1.56	.443	.406	.435	.432
33	K-6299	T	6-3⅝x4⅝	123-3200		299.0	6.40	232-1400 (BE)	N	In	I	Op	1.99	1.64	1.78	1.56	.443	.406	.435	.432
34	K-6330	T	6-4x4⅝	147-3200		330.0	6.40	266-1800 (BE)	N	In	I	Op	1.99	1.64	1.78	1.56	.443	.406	.435	.432
35	S-6820	T	6-5½x5½	275-2800		820.0		628-1400 (BE)	N	In	I	Op	2.39	2.14	2.25	2.00	.562	.562	.497	.495
36	V-903	Ind	8-4⅝x4¼	220-2800		603.0	7.00	500-1400 (BE)	N	In	I	Aus	2.41	2.02	2.25	1.88	.512	.505	.500	.500
37	V-6903	T,B	8-4⅝x4¼	240-3200		603.0	7.00	500-1400 (BE)	N	In	I	Aus	2.41	2.02	2.25	1.88	.512	.505	.500	.500
38	S-820	Ind	8-5½x5½	237-2200		820.0		625-1000 (BE)	N	In	I	Op	2.39	2.14	2.25	2.00	.562	.562	.497	.495
39	H-277	Ind	4-4x5½	98.4-1800		277.0	6.25	242-1000 (BE)	W	In	I	Op	1.64	1.45	1.50	1.31	.343	.343	.437	.437
40	M-383	Ind	6-4x4⅜	129-2800		383.0	6.70	294-1400 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.343	.404	.402
41	M-6383	T,B	6-4x4⅜	146-3000		383.0	6.70	304-1600 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.343	.404	.402
42	K-383	Ind	6-4x4⅜	123-2400		383.0	6.50	295-1400 (BE)	N	In	I	Op	1.99	1.65	1.78	1.56	.466	.441	.435	.432
43	K-6383	T,B	6-4x4⅜	162-3200		383.0	6.50	300-1800 (BE)	N	In	I	Op	1.99	1.65	1.78	1.56	.466	.441	.435	.432
44	Dearborn 125	M	8-3½x3⅞		125-4000	239.0	7.20	215-2200 (BE)	N	In	I		1.78	1.51			.360	.360	.342	.341
45	145	M	8-3⅝x3⅞		145-4000	256.0	7.60	228-2500 (BE)	N	In	I		1.78	1.51			.360	.360	.342	.341
46	165	M	8-3⅝x3⅞		165-4000	272.0	8.30	259-2400 (BE)	N	In	I		1.78	1.51			.360	.360	.342	.341
47	185	M	8-3¾x3⅞		185-4000	292.0	8.80	272-2500 (BE)	N	In	I		1.78	1.51			.360	.360	.342	.341
48	215	M	8-3¾x3⅞		215-4000	312.0	9.40	290-2800 (EA)	N	In	I	Aus	1.78	1.51	1.56	1.30	.396	.396	.342	.341
49	Dodge T-534, T-536, T-538,																			
	T-516, T-522	T	6-3½x4⅛	120-3600	109-3600	230.2	7.90	202-1800 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.379	.379	.341	.341
50	T-137	T	6-3½x4⅛	113-3600	102-3600	230.2	7.90	198-1600 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.379	.379	.341	.341
51	T-542, TS-542, T-544,																			
	TS-544	T	6-3½x4½	125-3600	115-3600	250.6	7.00	216-1600 (BE)	N	In	L	Sil	1.72	1.50	1.53	1.38	.379	.379	.341	.341
52	T-546, TS-546	T	6-3½x4⅝	130-3600	120-3600	265.4	7.00	228-1600 (BE)	N	In	L	Sil	1.72	1.50	1.53	1.38	.379	.379	.341	.434
53	T-504	T	6-3½x4⅝	130-3600	120-3600	265.4	7.00	228-1600 (BE)	N	In	L	Sil	1.72	1.50	1.53	1.38	.379	.379	.341	.434
54	VT-534, VT-536, VT-538,																			
	VT-516, VT-522	T	8-3⅝x3½	204-4400	165-4400	314.6	8.50	290-2400 (BE)	N	In	I	CNS	1.84	1.47	1.64	1.38	.259	.259	.373	.372
55	VT-542, VTS-542, VT-544,																			
	VTS-544, VT-556, VT-504	T	8-3⅝x3½	197-4400	159-4400	314.6	7.60	284-2400 (BE)	N	In	I	CNS	1.84	1.47	1.64	1.38	.259	.259	.373	.372
56	VT-546, VTS-546	T	8-3⅝x3½	197-4400	159-4400	314.6	7.60	284-2400 (BE)	N	In	I	CNS	1.84	1.47	1.64	1.38	.259	.259	.373	.372
57	VT-558	T	8-3⅝x3½	197-4400	159-4400	314.6	7.60	284-2400 (BE)	N	In	I	CNS	1.84	1.47	1.64	1.38	.259	.259	.373	.372
58	VT-548, VTS-548, VT-560,																			
	VT-562	T	8-3¾x3⅝	216-3900	186-3900	354.1	7.25	316-2600 (BE)	N	In	I	Sil	2.00	1.75	1.80	1.64	.259	.259	.373	.434
59	VT-550, VT-566	T	8-3¾x3⅝	222-3900	195-3900	354.1	7.25	338-2400 (BE)	N	In	I	Sil	2.00	1.75	1.80	1.64	.259	.259	.373	.434
60	VT-552, VT-568	T	8-3¾x3⅝	232-3900	206-3900	354.1	7.25	355-2500 (BE)	N	In	I	Sil	2.00	1.75	1.80	1.64	.259	.259	.373	.434
61	Fageol FTC-180	T,B,Ind	6-4¼x4¾	180-2800		404.0	7.50	380-1600 (BE)	D	In	I	2112n*	1.81	1.69	1.63	1.50	.388	.388	.373	.373
62	FTC-200	T,B,Ind	6-4⅝x5	200-2800		451.0	7.29	400-1600 (BE)	D	In	I	2112n*	1.81	1.69	1.63	1.50	.388	.388	.373	.373
63	FTC-210	T,B,Ind	6-4½x5	210-2800		477.0	7.09	480-1600 (BE)	D	In	I	2112n*	1.81	1.69	1.63	1.50	.388	.388	.373	.373
64	*FTC-180	T,B,Ind	6-4¼x4¾	180-2800		404.0	9.60	360-1600 (BE)	D	In	I	2112n*	1.81	1.69	1.63	1.50	.388	.388	.373	.373
65	*FTC-200	T,B,Ind	6-4⅝x5	200-2800		451.0	9.50	400-1600 (BE)	D	In	I	2112n*	1.81	1.69	1.63	1.50	.388	.388	.373	.373
66	*FTC-210	T,B,Ind	6-4½x5	210-2800		477.0	9.00	480-1600 (BE)	D	In	I	2112n*	1.81	1.69	1.63	1.50	.388	.388	.373	.373
67	44	M	4-2½x2¼		29-5000	44.0	9.00	33-3600 (EA)	N	Se	I	CNS	1.10	1.05	1.19	1.19	.244	.244	.314	.313
68	44	Ind	4-2½x2¼		26.5-5400	44.0	7.80	33-3600 (EA)	D	Se	I	CNS	1.10	1.05	1.19	1.19	.244	.244	.314	.313
69	Ford EAE	Tr	4-3⅞x3½	41-2000	39-2000	134.0	6.60	110-1450 (BE)	D	In	I	Aus	1.65	1.51	1.46	1.26	.355	.337	.342	.341
70	EAF	Tr	4-3⅞x3½	54.8-2200	48-2200	172.0	6.75	149-1300 (BE)	D	In	I	Aus	1.65	1.51	1.46	1.26	.355	.337	.342	.341
71	EBR, EBS, EBT	T	6-3⅝x3½	139-4200	126-4000	223.0	8.30	207-2250 (BE)	N	In	I	Aus	1.78	1.51			.369	.369	.342	.341
72	ECY	T	8-3⅝x3½	181-4400	153-4100	272.0	8.30	262-2450 (BE)	N	In	I	Aus	1.93	1.52			.400	.420	.342	.341
73	ECR	T	8-3⅝x3½	168-3800	143-3600	272.0	7.60	250-2500 (BE)	N	In	I	CNS(x	1.93	1.52			.400	.420	.342	.435
74	ECW	T	8-3⅝x3½	171-4400	145-4100	272.0	8.30	260-2350 (BE)	N	In	I	Aus	1.93	1.52			.400	.420	.342	.341
75	ET-60-R1	T	8-3⅝x3½	175-3800	149-3600	272.0	7.60	260-2500 (BE)	N	In	I	CNS(x	1.93	1.51			.400	.420	.342	.435
76	ECS	T	8-3⅝x3½	196-3800	172-3600	302.0	7.60	299-2500 (BE)	N	In	I	CNS(x	2.01	1.52			.346	.374	.342	.435
77	ECT	T	8-3½x3½	212-3800	187-3600	332.0	7.60	328-2500 (BE)	N	In	I	CNS(x	2.01	1.52			.346	.374	.342	.435
78	D	Ind	4-3.9x3.6	81-2800		172.0	6.75	147-1400 (BE)	D	In	I	Aus	1.65	1.52	1.46	1.26	.355	.337	.343	.342

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

GASOLINE ENGINES—*continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT							CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats														MAIN BEARINGS											
Angle (Deg.)	Inserts Used	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
(h)	E	SA	HG	Al	.....	1.25x3.18	4	1035	8½	.....	DFS	N	2.50x1.18	3	2.87x1.81	2.87x2.06	acdg	.....	.....	654	19¾	33⅜	30½	.....	1
(h)	Op	SA	HG	Cl	.....	.859x2.50	4	1030	7	.....	DFS	N	1.93x1.31	4	2.25x1.18	2.25x1.81	acdgt	Op	Op	505	26	27¼	36⅜	4	2
(h)	Op	SA	HG	Cl	.....	.859x2.50	4	1030	7	.....	DFS	Y	1.93x1.31	4	2.25x1.81	2.25x1.81	acdgt	Op	Op	515	26	27¼	36⅜	4,3	3
(h)	Op	SA	HG	Al	.....	.859x2.68	4	1030	7	.....	DFS	N	1.93x1.31	4	2.25x1.18	2.25x1.81	acdgt	Op	Op	505	26	27¼	36⅜	4	4
(h)	Op	SA	HG	Al	.....	.859x2.68	4	1030	7	.....	DFS	Y	1.93x1.31	4	2.25x1.18	2.25x1.81	acdgt	Op	Op	515	26	27¼	36⅜	4,3	5
(h)	Op	SA	HG	Cl	.....	.859x2.81	4	1030	7	.....	DFS	Y	2.06x1.31	4	2.37x1.28	2.37x1.73	acdgt	Op	Op	510	26	27¼	36⅜	4	6
(h)	Op	SA	HG	Al	.....	.859x2.81	4	1030	7	.....	DFS	Y	2.06x1.31	4	2.37x1.28	2.37x1.81	acdgt	Op	Op	515	26	27¼	36⅜	4,3	7
(h)	E	.....	HG	Al	.....	1.10x3.06	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	720	25¼	29½	42	3	8
(h)	E	SA	HG	Al	.....	1.10x3.06	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	755	25¼	29½	42	4,3	9
(h)	E	SA	HG	Al	.....	1.10x3.18	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	720	25¼	29½	42	3	10
(h)	E	SA	HG	Al	.....	1.10x3.18	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	755	25¼	29½	42	4,3	11
(h)	E	SA	HG	Al	.....	1.10x3.43	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	720	25¼	29½	42	3	12
(h)	E	SA	HG	Al	.....	1.10x3.43	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	755	25¼	29½	42	4,3	13
(h)	E	St	HG	Al	.....	1.25x3.43	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.62	acdgt	Op	Op	870	26	29¼	32½	2	14
(h)	E	St	HG	Al	.....	1.25x3.43	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdgt	Op	Op	870	26	29¼	43½	3,2	15
(n)	E	St	HG	Al	.....	1.25x3.37	5	1035	8⅝	.....	DFS‡	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdg	Op	Op	1070	24½	31⅝	45½	.....	16
(n)	E	SA	HG	Al	.....	1.25x3.37	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdg	Op	Op	1070	24½	31⅝	45½	.....	17
(n)	E	SA	HG	Al	.....	1.25x3.62	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdg	Op	Op	1075	24½	31⅝	45½	.....	18
(h)	E	.....	HG	Al	.....	1.25x3.43	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.62	acdfgt	Op	Op	875	26	29¼	43½	2	19
(h)	E	St	HG	Al	.....	1.25x3.43	5	1035	8⅝	.....	DFS‡	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdfgt	Op	Op	875	26	29¼	43½	3,2	20
(n)	E	St	HG	Al	.....	1.25x3.62	5	1035	8⅝	.....	DFS‡	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdg	Op	Op	1075	24½	31⅝	45½	.....	21
(h)	E	SA	HG	Al	.....	1.50x3.72	5	1035	10½	.....	DFS	Y	.....	7	2.75x1.75	2.75x2.81	acfg	.....	.....	.....	26½	37⅛	47⅞	2	22
(h)	E	St	HG	Al	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	.....	7	2.75x1.75	2.75x2.81	acfg	Op	Op	.....	26½	37⅛	47⅞	2	23
(h)	E	.....	HG	Al	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfgt	Op	Op	1550	.....	.....	.....	1	24
(h)	E	St	HG	Al	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfg	Op	Op	1525	.....	.....	.....	2	25
(h)	E	.....	HG	Al	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfgt	Op	Op	1550	.....	.....	.....	1	26
(h)	E	St	HG	Al	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfg	Op	Op	1525	.....	.....	.....	2	27
(h)	E	St	HG	Al	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfg	Op	Op	1550	.....	.....	.....	1	28
(h)	E	St	HG	Al	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfgt	Op	Op	1525	.....	.....	.....	2	29
(h)	E	St	HG	Al	.....	1.75x4.53	5	8640	10½	.....	DFS‡	Y	.....	7	3.75x1.12	3.75x3.12	acdg	Op	Op	1885	31¼	47⅞	57⅞	0	30
(h)	E	St	HG	Al	.....	1.75x4.53	5	8640	10½	.....	DFS‡	Y	.....	7	3.78x1.87	3.75x3.12	acdg	Op	Op	1885	31¼	47⅞	57⅞	1	31
(n)	E	St	HG	Al	.....	1.10x3.06	5	1035	8⅝	.....	DFS‡	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdfg	Op	Op	.....	.....	.....	.....	3	32
(n)	E	St	HG	Al	.....	1.10x3.18	5	1035	8⅝	.....	DFS‡	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdfg	Op	Op	.....	.....	.....	.....	3	33
(n)	E	St	HG	Al	.....	1.10x3.43	5	1035	8⅝	.....	DFS‡	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdfg	Op	Op	.....	.....	.....	.....	3	34
(h)	E	St	HG	Al	.....	1.75x4.53	5	8640	10½	.....	DFS‡	Y	.....	7	3.75x1.87	3.75x3.12	acdg	Op	Op	.....	.....	.....	.....	.....	35
(h)	E	AS	HG	Al	.....	1.50x3.97	4	8637	8⅝	46.8	1046	.....	3.13x3.13	5	3.50x1.63	3.50x2.75	abcdfg	.....	1¼	.....	.....	.....	.....	2	36
(h)	E	AS	HG	Al	.....	1.50x3.97	4	8637	8⅝	46.8	1046	.....	3.13x3.13	5	3.50x1.63	3.50x2.75	abcdfg	.....	1¼	1788	32⅛	33⅞	44⅞	2	37
(h)	E	St	HG	Al	.....	1.75x4.53	5	8640	10½	.....	DFS‡	.....	.....	7	3.75x1.87	3.75x3.12	abcdfg	Op	.....	.....	.....	.....	.....	.....	38
(h)	E	SA	HG	Al	.....	1.25x3.18	4	1035	9½	.....	DFS	.....	2.50x1.18	3	2.87x1.81	2.87x2.06	acdfg	Op	.....	660	19¾	33⅜	30½	3	39
(h)	E	SA	HG	Al	.....	1.10x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.62x1.50	2.62x2.18	acdg	Op	.....	850	25¼	29½	42	3	40
(h)	E	SA	HG	Al	.....	1.10x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.62x1.50	2.62x2.18	acdg	Op	.....	840	25¼	29½	42	3	41
(h)	E	Ste*	HG	Al	.....	1.11x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.81x1.36	2.81x1.94	acdfg	Op	.....	970	24½	34	40⅛	3	42
(h)	E	Ste*	HG	Al	.....	1.11x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.81x1.36	2.81x1.94	acf	Op	.....	960	24½	34	40⅛	3	43
45	N	.....	Ch	Als	25.4	.912x3.02	3	SF	6¾	24.2	Al	Y	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Car	1⅛	638*	27⅞	24⅞	36⅛	.....	44
45	N	.....	Ch	Als	26.7	.912x3.02	3	SF	6¾	24.2	Al	Y	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Car	1⅛	638*	27⅞	24⅞	36⅛	.....	45
45	N	.....	Ch	Als	26.7	.912x3.02	3	SF	6¾	24.2	Al	Y	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Car	1⅛	640	27⅞	24⅞	36⅛	.....	46
45	N	.....	Ch	Als	26.8	.912x3.02	3	SF	6¾	24.2	Al	Y	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Car	1⅛	640	27⅞	24⅞	36⅛	.....	47
45	N	.....	Ch	Al†	27.6	.912x3.02	3	SF	6¼	22.6	Al	.....	2.19x1.76	5	2.62x.728	2.62x.728	acdfg	Car	1⅛	640*	27⅞	24⅞	36⅛	.....	48
45	E	SA	Ch	Al	15.7**	.859x2.75	4	MS	7½	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	BB	1½	560	24¾	36¼	29½	.....	49
45	E	SA	Ch	Al	15.7**	.859x2.75	4	MS	7½	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	BB	1½	560	24¾	36¼	29½	.....	50
45	E	SA	Ch	Al	19.1**	.859x2.87	4	MS	7¼	.....	CS	.....	2.12x1.06	4	2.50x1.16	2.50x1.59	acdg	BB	1½	620	25½	37½	32⅝	.....	51
45	E	SA	Ch	Al	19.1**	.859x2.87	4	MS	7¾	.....	CS(q)	.....	2.12x1.06	4	2.50x1.16	2.50x1.59	acdg	BB	1½	620	25½	37½	32⅝	.....	52
45	E	SA	Ch	Al	19.1**	.859x2.87	4	MS	7¾	.....	CS	.....	2.12x1.06	4	2.50x1.16	2.50x1.59	acdg	BB	1½	620	25½	37½	32⅝	.....	53
45	N	.....	Ch	Al	17.7**	.922x3.07	3	MS	6⅝	.....	CS	.....	2.25x.811	5	2.50x8.20	2.50x1.53	acdfg	Str	1⅞	660	.....	.....	.....	.....	54
45	N	.....	Ch	Al	17.5**	.922x3.07	3	MS	6⅝	.....	CS	.....	2.25x.811	5	2.50x.820	2.50x1.53	acdfg	Str	1⅞	695	.....	.....	.....	.....	55
45	E	SA	Ch	Al	17.5**	.922x3.07	3	MS	6⅝	.....	CS(q)	.....	2.25x.811	5	2.37x.822	2.37x1.53	acdfg	Str	1⅞	695	.....	.....	.....	.....	56
45	E	SA	Ch	Al	17.5**	.922x3.07	3	MS	6⅝	.....	CS(q)	.....	2.25x.811	5	2.37x.822	2.37x1.53	acdfg	Str	1⅞	695	.....	.....	.....	.....	57
45	E	SA	Ch	Al	22.6**	.984x3.14	3	MS	6⅝	.....	CS(q)	.....	2.25x.906	5	2.50x.875	2.50x1.59	acdfg	Car	1⅛	.....	.....	.....	.....	.....	58
45	E	Eat	G	Al	22.6**	.984x3.14	3	MS	6⅝	.....	CS(q)	.....	2.25x.906	5	2.50x.875	2.50x1.59	acdfg	Car	1⅛	.....	.....	.....	.....	.....	59
45	E	Eat	G	Al	22.6**	.984x3.14	3	MS	6⅝	.....	CS(q)	.....	2.25x.906	5	2.50x.875	2.50x1.59	acdfg	Car(2)	1⅛	.....	.....	.....	.....	.....	60
45	E	71360°	Ch	Alt	53.5	1.25x3.62	4	SF	8⅝	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Hol	1¼	952	33⅞	26⅞	48⅛	1,2,3	61
45	E	71360°	Ch	Alt	54.0	1.25x3.62	4	SF	8⅝	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Hol	1¼	952	33⅞	26⅞	48⅛	1,2,3	62
45	E	71360°	Ch	Alt	56.8	1.25x3.87	4	SF	8⅝	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Hol	1¼	952	33⅞	26⅞	48⅛	1,2,3	63
45	Bo	71360°	Ch	Alt	53.5	1.25x3.62	4	SF	8⅝	63.8	CS	Y	2.49x1.69	7	2.62x1.81	2.63x1.81	acdefg	Alg	1⅜	952	33⅞	26⅞	48⅛	1,2,3	64
45	Bo	71360°	Ch	Alt	54.0	1.25x3.62	4	SF	8⅝	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Alg	1⅜	952	33⅞	26⅞	48⅛	1,2,3	65
45	Bo	71360°	Ch	Alt	56.8	1.25x3.87	4	SF	8⅝	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Alg	1⅜	952	33⅞	26⅞	48⅛	1,2,3	66
45	N	.....	HG	Ata	8.3	.625x2.13	4	3140	4½	10.8	NI	Y	1.37x1.07	5	1.37x1.42	1.50x1.50	acd	Car	1⅛	120	14¼	20⅝	23⅝	5	67
45	N	.....	HG	Ata	8.3	.625x2.13	4	3140	4½	10.8	NI	.....	1.37x1.07	5	1.37x1.42	1.50x1.50	acd	Car	1⅛	120	14¼	20⅝	23⅝	5	68
45	E	CA	HG	Alst	24.0	.912x2.84	3	1041	6¼	32.0	NI	.....	2.30x1.25	3	2.50x1.50	2.50x1.65	acdf	MaS	7/8	489*	19⅞	27⅛	30⅛	5	69
45	E	CA	HG	Alst	31.4	.912x3.17	3	1041	6¼	32.0	NI	.....	2.30x1.25	3	2.50x1.50	2.50x1.65	acdf	MaS	1	489*	19⅞	27⅛	30⅛	5	70
45	N	.....	Ch	Alst	19.2**	.912x3.02	3	SF	6¼	29.6	Al	.....	2.30x1.25	4	2.25x.923	2.50x.923	acdfg	Own	.....	.....	19⅛	30⅛	33⅛	.....	71
45	N	.....	Ch	Alst	18.7**	.912x3.02	3	SF	6¾	24.1	Al	.....	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Own	.....	.....	.....	.....	.....	.....	72
45	E	TCA	Ch	Alst	18.7**	.912x3.02	3	SF	6¾	24.1	Al	.....	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Own	.....	.....	32⅛	32⅛	31⅛	.....	73
45	N	.....	Ch	Alst	18.7**	.912x3.02	3	SF	6¾	24.1	Al	.....	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Own	.....	.....	32⅛	35¼	31⅛	.....	74
45	E	TCA	Ch	Alt	20.5**	.912x3.02	3	SF	6¾	24.1	Al	.....	2.19x1.76	5	2.50x1.12	2.50x1.15	acdfi	Own	.....	.....	32⅛	.....	31⅛	.....	75
45	E	TCA	SG	Alst	22.9**	.912x3.02	4	SF	7⅛	28.4	Al	.....	2.25x1.88	5	2.62x.723	2.62x.723	acdf	Own	.....	.....	33⅛	35⅛	31⅛	.....	76
45	E	TCA	SG	Alst	19.2**	.912x3.17	4	SF	7⅛	28.4	SF	.....	2.25x1.88	5	2.63x.723	2.62x.73	acdf	Own	.....	.....	33⅛	35⅛	31⅛	.....	77
45	N	N	Ch	Alst	25	.912x2.98	3	MS	6¾	24	Al	.....	2.19x1.76	5	2.50x1.17	2.50x1.22	acdfg	MaS	1	606	28⅛	30⅛	31⅞	1,4	78

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

For Directory of the Engine Manufacturers listed above, see Table of Contents

• GASOLINE ENGINES •

1957 AUTOMOTIVE

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
	Ford—Cont'd																			
1	E	Ind	4-3.44x3.6	48.5-2800		134.0	6.60	110-1400 (BE)	D	In	I	Aus	1.65	1.52	1.46	1.26	.355	.337	.343	.342
2	F	Ind	6-3⅝x3⅓	107-2800		223.0	8.30	203-2000 (BE)	N	In	I	Aus*	1.76	1.51	1.46	1.26	.369	.369	.342	.341
3	J	Ind	8-3⅝x3⅓	132-2800		272.0	8.30	248-2100 (BE)	N	In	I	Aus*	1.43	1.52			.400	.420	.342	.341
4	L	Ind	8-3⅜x3⅓	168-2800		332.0	7.60	318-2000 (BE)	N	In	I	CNSx*	2.01	1.52			.346	.374	.342	.435
5	GMC 270	B	6-3⅛x4	130-3600	121-3400	269.5	7.75	238-1650 (BE)	N	In	I	Sil	1.64	1.46	1.31	1.15	.395	.387	.341	.340
6	270	T	6-3⅛x4	140-3600	127-3400	269.5	7.75	246-1800 (BE)	N	In	I	Sil	1.64	1.43	1.31	1.15	.395	.387	.341	.340
7	302	T	6-4x4	160-3800	141-3400	301.6	7.50	268-1800 (BE)	N	In	I	Aus	1.86	1.56	1.56	1.18	.395	.398	.341	.340
8	347	T	8-3⅛x3.5/8	206-4400	182-3600	347.0	7.80	317-2200 (BE)	N	In	I	Sil	1.86	1.60			.373	.373	.344	.344
9	370	T	8-4x3⅛	232-4200	199-3600	370.7	7.65	355-2600 (BE)	N	In	I	Sil	1.75	1.56			.420	.435	.344	.391
10	503	T	6-4⅛x5½	220-3000	199-2800	502.7	6.85	455-1600 (BE)	N	Se	I	Sil(x)	2.00	1.69	1.75	1.50	.460	.460	.372	.434
11	Gray Marine... Seascout 4-91	M	4-2⅝x3½		25-2000	91.0	7.45		N	In	L	Sil	1.20	1.02	1.06	.875	.284	.284	.314	.313
12	Four-112	M	4-3⅛x3½		31-2000	112.0	6.00		N	In	L	Sil	1.20	1.02	1.06	.900	.284	.284	.313	.313
13	Four-162	M	4-3⅞x4⅝		63-3000	162.0	6.50		N	In	L	Sil	1.51	1.33	1.37	1.18	.331	.331	.340	.381
14	Four-45	M	4-2⅝x3½		45-3600	91.0	7.45		N	In	L	Sil	1.20	1.02	1.06	.875	.284	.284	.314	.314
15	Four-75	M	4-3⅞x4⅝		75-3600	162.0	8.00		N	In	L	Sil	1.64	1.45	1.37	1.18	.331	.331	.340	.312
16	Six-112	M	6-3⅛x4⅝		115-3600	226.0	8.00		N	In	L	Sil	1.51	1.33	1.37	1.18	.311	.311	.340	.339
17	Fireball 4-90	M	4-3⅞x4⅝		90-4000	162.0	8.00		N	In	L	Sil	1.64	1.45	1.16	1.07	.331	.331	.340	.310
18	Model 620	M	4-3⅞x3⅝		66-3200	140.0	7.05	96-2400 (EA)	N	In	L	Sil	1.51	1.33	1.37	1.18	.331	.331	.341	.339
19	Model 70	M	4-3⅞x4⅝		70-3400	162.0	8.00	125-2200 (EA)	N	In	L	Sil	1.64	1.45	1.37	1.18	.331	.331	.340	.312
20	Model 100	M	6-3⅞x4⅝		100-3400	226.0	8.00		N	In	L	Sil	1.51	1.33	1.37	1.18	.311	.311	.340	.339
21	Model 110	M	6-3⅞x4⅝		110-3600	226.0	8.00	1595-2800 (EA)	N	In	L	Sil	1.51	1.33	1.37	1.18	.349	.332	.340	.339
22	Model 120	M	6-3⅞x4⅝		120-3600	244.0	8.00	186-2600 (EA)	N	In	L	Sil	1.70	1.42	1.56	1.31	.311	.311	.339	.343
23	Model 136	M	6-3⅞x4⅝		136-3600	244.0	8.00	216-2800 (EA)	N	In	L	Sil	1.70	1.42	1.56	1.31	.311	.311	.339	.343
24	Model 150	M	6-4x4⅛		150-3400	330.0	7.75		N	In	L	Sil(x)	1.89	1.58	1.62	1.37	.354	.354	.403	.401
25	Model 165	M	6-4x4⅛		165-3400	363.0	8.00	286-1400 (EA)	N	In	L	Sil	1.89	1.59	1.62	1.37	.354	.354	.404	.431
26	Model 175	M	6-4x4⅛		175-3400	363.0	8.00	316-1400 (EA)	N	In	L	Sil	1.89	1.59	1.62	1.37	.354	.354	.404	.431
27	Model 185	M	6-4⅛x4⅞		185-3400	427.0	7.20	352-1200 (EA)	N	In	L	Sil	2.16	1.77	2.02	1.63	.359	.359	.434	.431
28	Model 200	M	6-4⅛x4⅞		200-3400	427.0	7.20	388-1200 (EA)	N	In	L	Sil	2.16	1.77	2.02	1.63	.359	.359	.434	.431
29	Hall-Scott (m) (H) 190-2-3-5	B,T	6-5½x6	220-2200	200-2200	779.0	5.60	625-1300 (BE)	W	In	I	2112	2.63	2.38	2.38	2.02	.482	.482	.497	.529
30	(m) 400	Ind	6-5½x7	296-2000	252-2000	1090.0	5.70	930-1300 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.497	.529
31	2268, 2268-1, 2269, 2269-1	M,Ind	12-5½x7		630-2100	2181.0	6.50		N	Se	I	2112	2.87	2.75	2.62	2.50	.482	.482	.497	.529
32	1091-G-1, (m) 1091-B-1	T,Ind	6-5½x7	332-2200	308-2200	1090.0	6.40	966-1200 (BE)	N	Se	I	2112	2.62	2.37	2.38	2.02	.547	.547	.497	.529
33	935-G-1, (m) 935-B-1	T,Ind	6-5½x6	295-2400	270-2400	935.0	6.40	800-1400 (BE)	N	Se	I	2112	2.62	2.37	2.38	2.02	.547	.547	.497	.529
34	590-GV-3, 590-GV-4	B,T,Ind	6-5x6	232-2800	205-2800	590.0	6.60	510-1800 (BE)	N	Se	I	2112	2.37	2.37	2.14	2.14	.500	.500	.496	.496
35	^590-BV-1	B,T,Ind	6-5x5	246-2800	205-2800	590.0	9.00	510-1800 (BE)	N	Se	I	2112	2.37	2.37	2.14	2.14	.500	.500	.496	.496
36	590-GH-1	B,T,Ind	6-5x5	232-2800	205-2800	590.0	6.60	510-1800 (BE)	N	Se	I	2112	2.37	2.37	2.14	2.14	.500	.500	.496	.496
37	^590-BH-1	B,T,Ind	6-5x5	246-2800	205-2800	590.0	9.90	510-1800 (BE)	N	Se	I	2112	2.37	2.37	2.14	2.14	.500	.500	.496	.496
38	590-O	Ind	6-5x5	229-2400	219-2400	590.0	8.70	510-1600 (BE)	N	Se	I	2112	2.38	2.38	2.16	2.19	.500	.500	.497	.496
39	6156-G-1	T	6-5½x6	312-2400	294-2400	935.0	6.40	830-1300 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.496	.527
40	6156-B-1	T	6-5½x6	338-2400	320-2400	935.0	8.10	870-1300 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.496	.527
41	6182-G-1	T,Ind	6-5½x7	332-2200	317-2200	1091.0	6.50	960-1250 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.496	.527
42	6182-B-1	T,Ind	6-5½x7	356-2200	341-2200	1091.0	8.10	1065-1100 (BE)	N	Se	I	2112	2.62	2.38	2.38	2.02	.547	.547	.496	.527
43	Hercules BXB	M,Tr,Ind	2-2⅞x3	10-2300	8.5-2300	39.0	6.00	28-1200 (BE)	N	In	L	Aus	1.30	1.05	1.12	.875	.200	.200	.248	.248
44	NXA	M,Tr,Ind	2-3x4	13-2000	11-2000	56.5	6.20	39-1100 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
45	ZXA	M,T,Tr,Ind	4-2⅛x3	22.5-4000	19-4000	59.0	6.30	36-2200 (BE)	N	In	L	Aus	1.30	1.05	1.12	.875	.200	.200	.248	.248
46	ZXB	T,Tr,M,Ind	4-2⅝x3	25-4000	21-4000	65.0	6.30	40-2200 (BE)	N	In	L	Aus	1.30	1.05	1.12	.875	.200	.200	.248	.248
47	NXB	M,Tr,Ind	2-3⅛x4	15.6-2000	13-2000	66.3	6.20	46-1100 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
48	IXA	T,Tr,M,Ind	4-3x4	40-3200	34-3200	113.0	6.50	78-1800 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
49	IXB	T,Tr,M,Ind	4-3⅛x4	46-3200	39-3200	133.0	6.50	92-1800 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
50	IXLB	T,Tr,M,Ind	4-3⅛x4⅛	49-3200	42-3200	141.0	6.50	97-1800 (BE)	N	In	L	Aus	1.48	1.38	1.25	1.12	.250	.250	.310	.310
51	JX4E	T,Tr,M,Ind	4-3⅛x4⅛	52-2900	44-2900	164.0	6.70	121-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
52	GO-173	Tr,M,Ind	4-3⅛x4⅛	67-3200	61-3200	173.0	6.50	139-1400 (BE)	N	In	I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.376
53	JX4C	T,Tr,M,Ind	4-3⅝x4⅛	60-2900	51-2900	186.0	6.70	139-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
54	QXA	T,B,Tr,M,Ind	6-3⅛x4⅛	64-3200	54.5-3200	190.0	6.50	132-1300 (BE)	N	In	L	2112N	1.40	1.40	1.31	1.12	.311	.311	.310	.310
55	GO-198	Tr,M,Ind	4-3⅝x4⅛	76-3200	68.5-3200	198.0	6.50	159-1400 (BE)	D		I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.376
56	QXB	T,B,Tr,M,Ind	6-3⅛x4⅛	89-3200	80-3200	205.0	6.50	142-1400 (BE)	N	In	L	2112N	1.40	1.40	1.31	1.12	.311	.311	.310	.310
57	JX4D	T,Tr,M,Ind	4-4x4⅛	68-2900	57-2900	214.0	6.70	157-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
58	QXC	T,B,Tr,M,Ind	6-3⅝x4⅛	77.5-3200	68-3200	221.0	6.50	139-1400 (BE)	N	In	L	2112N	1.64	1.64	1.50	1.25	.311	.311	.310	.310
59	GO-226	Tr,M,Ind	4-4x4⅛	87-3200	78.5-3200	226.0	6.50	182-1400 (BE)	N	In	I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.376
60	QXD	T,B,Tr,M,Ind	6-3⅞x4⅛	78.4-3200	70-3200	230.0	6.50	167-1500 (BE)	N	In	L	2112N	1.64	1.64	1.50	1.25	.311	.311	.310	.310
61	QXLD	T,B,Tr,M,Ind	6-3⅞x4⅛	92-3200	77-3200	236.7	6.50	190-1400 (BE)	N	In	L	2112N	1.64	1.64	1.50	1.25	.311	.311	.310	.310
62	JXE	T,B,Tr,M,Ind	6-3⅛x4⅛	91-3200	77-3200	245.0	6.50	184-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
63	GO-260	Tr,M,Ind	6-3⅛x4⅛	101-3200	91-3200	260.0	6.50	206-1400 (BE)	N	In	I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.376
64	JXB	T,B,Tr,M,Ind	6-3⅝x4⅛	98-3200	83-3200	263.0	6.50	190-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
65	JXC	T,B,Tr,M,Ind	6-3⅝x4⅛	103-3200	87.5-3200	282.0	6.50	207-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
66	GO-296	Tr,M,Ind	6-3⅝x4⅛	115-3200	104-3200	296.0	6.50	240-1400 (BE)	D	In	I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.376
67	JXD	T,B,Tr,M,Ind	6-4x4⅛	113-3000	96-3000	320.0	6.50	240-1200 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
68	JXLD	T,B,Tr,M,Ind	6-4x4⅛	131-3200	111-3200	339.0	6.50	272-1400 (BE)	N	In	L	2112N	1.83	1.67	1.72	1.50	.356	.356	.373	.373
69	GO-339	Tr,M,Ind	6-4x4⅛	131-3200	118-3200	339.0	6.50	272-1400 (BE)			I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.376
70	WXLC	T,B,Tr,M,Ind	6-4x4⅝	123-2600	104-2600	358.0	6.50	275-1300 (BE)	N	In	L	3140	1.87	1.75	1.68	1.62	.388	.388	.373	.373
71	WXC-3	T,B,Tr,M,Ind	6-4⅛x4⅛	131-2600	111-2600	383.0	6.50	296-1400 (BE)	N	In	L	2112N	1.87	1.75	1.62	1.56	.388	.388	.373	.373
72	WXLC-3	T,B,Tr,M,Ind	6-4⅛x4⅝	139-2600	118-2600	404.0	6.50	312-1300 (BE)	N	In	L	2112	1.92	1.75	1.75	1.62	.388	.388	.373	.373
73	TDXB	T,B,Tr,M,Ind	6-4⅝x5⅛	161-2600	137-2600	474.0	6.50	366-1300 (BE)	N	In	L	2112	2.06	2.00	1.87	1.75	.388	.388	.436	.438
74	RXB	T,B,Tr,M,Ind	6-4⅛x5⅛	137-2400	116-2400	501.0	6.30	350-1200 (BE)	N	In	L	2112N	2.00	2.00	1.75	1.75	.388	.388	.373	.373
75	TDXC	T,B,Tr,M,Ind	6-4⅛x5⅛	170-2600	146-2600	501.0	6.50	388-1300 (BE)	N	In	L	2112	2.06	2.00	1.87	1.75	.388	.388	.436	.436
76	RXC	T,B,Tr,M,Ind	6-4⅝x5⅛	143-2400	121-2400	529.0	6.30	372-1100 (BE)	N	In	L	2112N	2.00	2.00	1.75	1.75	.388	.388	.373	.373
77	RXLC	T,B,Tr,M,Ind	6-4⅝x5⅛	146-2400	124-2400	529.0	6.30	408-1100 (BE)	N	In	L	2112N	2.00	2.00	1.81	1.75	.388	.388	.373	.373
78	RXLD	T,B,Tr,M,Ind	6-4⅝x5⅛	154-2400	131-2400	558.0	6.30	430-1100 (BE)	N	In	L	2112N	2.00	2.00	1.81	1.75	.388	.388	.373	.373
79	RXLDH	T,B,Tr,M,Ind	6-4⅝x5⅛	161-2600	153-2600	558.0	6.50	443-1400 (BE)	N	In	L	2112N	2.06	2.00	1.87	1.75	.442	.435	.435	.438
80	HXB	T,B,Tr,M,Ind	6-5x6	160-2000	135-2000	707.0	6.20	502- 900 (BE)	N	Se	L	2112	2.43	2.31	2.12	2.00	.468	.468	.498	.498
81	HXC	T,B,Tr,M,Ind	6-5⅛x6	175-2000	149-2000	779.0	6.20	555- 900 (BE)	N	Se	L	2112	2.44	2.31	2.12	2.00	.468	.468	.498	.498
82	HXLC	T,B,Tr,M,Ind	6-5⅛x6	240-2.00	212-2400	779.0	6.40	600-1400 (BE)	N	Se	L	2112	2.44	2.31	2.25	2.00	.500	.500	.498	.498
83	HXD	T,B,Tr,M,Ind	6-5⅛x6	202-2000	172-2000	855.0	6.20	645- 900 (BE)	N	Se	L	2112	2.44	2.31	2.12	2.00	.468	.468	.498	.498
84	HXLD	T,B,Tr,M,Ind	6-5⅛x6	252-2400	225-2400	855.0	6.40	696-1400 (BE)	N	Se	L	2112	2.44	2.31	2.25	2.00	.500	.500	.498	.498
85	HXE	T,B,Tr,M,Ind	6-5⅝x6	227-2000	193-2000	935.0	6.20	750- 900 (BE)	N	Se	L	2112	2.44	2.31	2.18	2.00	.468	.468	.498	.498
86	HXLE	T,B,Tr,M,Ind	6-5⅝x6	272-2400	245-2400	935.0	6.40	760-1400 (BE)	N	Se	L	2112	2.44	2.31	2.25	2.00	.500	.500	.498	.498

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

GASOLINE ENGINES—*continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT							CARBURETOR			OVERALL DIMENSIONS (in.)				
Seats														MAIN BEARINGS											
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
45	N	N	Ch	Alst	26	.912x3.03	3	MS	6 11/16	30.5	Al	....	2.30x1.25	4	2.50x1.30	2.50x1.64	acdfg	MaS	1 1/4	507	23 3/16	29 11/16	36 11/16	3,4	1
45	N	....	Ch	Alst	19.2°°	.912x3.02	3	SF	6 1/4	29.6	Al	....	2.30x1.25	4	2.50x.923	2.50x.923	acdfg	Hol	1 1/4	507	28 11/16	31	31 1/2	3,4	2
45	N	....	Ch	Alst	18.7°°	.912x3.02	3	SF	6 21/32	24.1	Al	....	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Hol	1 1/4	610	28 1/16	32 11/16	32 7/8	3,4	3
45	E	TCA	HG	Alst	22.9°°	.912x3.17	4	SF	7 1/16	28.4	Al	....	2.25x1.88	5	2.62x.723	2.62x.723	acdf	Hol	1 3/8	753	31 1/2	34 11/16	33 11/16	2,3	4
30	AS	....	HG	Al	41	1.05x3.25	4	1141	7	34	1046	Y	2.31x1.44	4	2.69x1.25	2.78x1.53	abcdfg	Zen	1 1/2	....	26 1/16	35	41	....	5
30	N	....	HG	Al	41.0	.990x3.25	4	1141	7	35.0	1046	....	2.31x1.44	4	2.69x1.25	2.78x1.53	abcdefg	Zen	1 1/2	....	20 1/2	35	41	....	6
(h)	N	....	HG	Al	43.0	1.05x3.50	4	1141	7	35.0	1046	....	2.31x1.44	4	2.69x1.25	2.78x1.53	abcdefg	Ben	1	....	26	34	40 1/2	....	7
(h)	....	....	Ch	Alst	....	.980x3.03	3	1335	6 5/8	30.0	1045	....	2.25x2.00	5	2.62x.940	2.62x1.56	abcdefg	Ben	1 1/4	....	....	....	....	....	8
45	N	....	Ch	Alst	....	.980x3.03	3	1335	6 5/8	30.0	1145	....	2.25x2.00	5	2.75x.818	2.75x1.19	abcdefg	Hol	1 1/4	....	....	....	....	....	9
(h)	E	AS	HG	Al	67.0	1.25x3.96	4	1340	10 5/8	67.0	5046	....	2.62x1.75	7	3.00x2.19	3.00x2.19	abcdefg	Hol	1 3/4	....	39 5/8	41	49 3/4	....	10
(h)	N	....	HG	Al	....	.703x2.43	3	1030	5 3/4	....	1045	N	1.5x1.18	3	1.75x1.78	1.75x1.37	acdr	Zen	1	385	17 3/4	19 1/8	31	....	11
(h)	N	....	HG	Al	....	.703x2.43	3	1030	5 3/4	....	1045	....	1.50x1.00	3	1.75x1.43	1.75x1.21	acdr	Zen	1	400	17 3/4	19 1/8	31	....	12
(h)	N	....	HG	Al	....	.708x2.75	3	1030	5 3/4	....	1045	....	1.50x1.00	3	1.75x1.43	1.75x1.21	acdr	Zen	1	565	19 1/4	22 1/8	30	....	13
(h)	N	....	HG	Al	....	.859x2.69	4	CS	7	....	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	acdr	Zen	1 1/4	390	17 3/4	19 1/8	31	....	14
(h)	N	....	HG	Al	....	.703x2.43	3	CS	5 3/4	....	1045	N	1.5x1.18	3	1.75x1.78	1.75x1.37	acdr	Zen	1 3/4	840	23 1/16	22 1/8	35	....	15
(h)	N	....	HG	Al	....	.859x2.68	4	CS	7	....	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	acdr	Zen	1 3/4	675	21 1/16	23 1/4	41	....	16
(k)	N	....	HG	Al	....	.859x2.81	4	CS	7	....	1045	Y	2.06x1.31	4	2.37x1.73	2.37x1.28	acdr	Zen	1 3/4	840	21 1/16	22 1/8	35	....	17
(h)	N	....	HG	Al	....	.859x2.68	4	CS	7	....	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	acdr	Zen	1 1/4	840	21 1/16	22 1/8	35	....	18
(k)	N	....	HG	Al	28	.859x2.68	4	1035	7	28	1045	....	1.94x1.31	3	2.25x1.89	2.25x1.31	acd	Car	1 1/4	525	19 1/16	21 1/8	34	....	19
(h)	N	....	HG	Al	....	.859x2.68	4	1035	7	28.0	1045	....	1.93x1.31	3	2.25x1.89	2.25x1.18	acd	Zen	1 3/4	545	19 1/16	21 1/8	34	....	20
(k)	N	....	HG	Al	....	.859x2.81	4	1030	7	....	1045	....	2.06x1.31	4	2.37x1.73	2.37x1.28	acdr	Zen	1 3/4	660	21 1/16	23 1/4	41	....	21
(k)	N	....	HG	Alt	32	.859x2.81	4	1035	7	....	1045	....	2.06x1.31	4	2.37x1.73	2.37x1.28	acd	Str	1 1/4	700	22	27	41	....	22
45	N	....	HG	Al	....	.859x2.87	4	1035	8 1/4	....	1045	....	2.12x1.37	4	2.37x2.06	2.37x1.43	acd	Zen	1 1/2	785	25 1/4	23 1/4	43 1/4	....	23
45	N	....	HG	Al	....	.859x2.87	4	1035	8 1/4	....	1045	....	2.12x1.37	4	2.37x2.06	2.37x1.43	acd	Zen	1 1/2	800	25 1/4	23 1/4	43	....	24
(k)	N	....	HG	Al	....	1.10x3.43	5	1035	8 1/4	....	1045	....	2.25x1.56	7	2.62x2.15	2.62x1.56	acdr	Zen	2	1050	24 5/8	25 1/4	49	....	25
(k)	N	....	HG	Alt	....	1.10x3.43	5	1035	8 1/4	....	1046	....	2.25x1.56	7	2.62x2.15	2.62x1.56	acd	Zen	....	1050*	24 5/8	25 1/4	46 1/2	....	26
(k)	N	....	HG	Alt	....	1.10x3.43	5	1035	8 1/4	....	1046	....	2.25x1.56	7	2.62x2.15	2.62x1.56	a	Zen	....	1070*	24 5/8	25 1/4	46 1/2	....	27
(k)	N	....	HG	Alt	....	1.25x3.63	5	1035	8 1/4	....	1045	....	2.50x1.65	7	2.87x2.71	2.87x1.65	a	Zen	....	1245*	28 1/16	27 1/16	51 1/16	....	28
(k)	N	....	HG	Alt	....	1.25x3.63	5	1035	8 1/4	....	1045	....	2.50x1.65	7	2.87x2.71	2.87x1.65	a	Zen	....	1250*	28 1/16	27 1/16	51 1/16	....	29
(h)	E	4140°	Ch	Al	101	1.37x4.44	6	3135	11	104	4140	Y	2.75x2.44	7	3.25x2.19	3.25x2.50	acdefg	Zen	2	1786*	8 5/16	22	71 5/8	1,2	29
(h)	E	4140°	HC	Al	120	1.37x4.93	5	3140	12	132	4140	Y	3.00x2.43	7	3.25x2.09	3.25x3.12	acdefg	Zen	2 1/2	2150*	28	44 5/8	60 1/16	1,2,0	30
30	E	4140°	HC	Al	128	1.37x4.94	6	3140	12	237+	4140	Y	3.00x2.43	7	3.25x2.09	3.25x2.09	acdefgr	Zen(3)	2 1/2	3650*	45	47 3/4	88	....	31
(h)	E	4140°	HC	Al	141	1.62x4.93	4	3140	11 1/2	136	4140	Y	3.24x2.06	7	3.50x2.10	3.50x3.05	abcdefg	Zen	2 1/2	2150*	30 1/2	44	61 1/4	2,1,1/2,0	32
(h)	E	4140°	HC	Al	145	1.62x4.93	4	3140	11 1/2	136	4140	Y	3.24x2.06	7	3.50x2.10	3.50x3.05	abcdefg	Zen	2 1/2	2150*	30 1/2	44	61 1/4	2,1,1/2,0	33
45	E	4140°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Hol	1 1/2	1130*	26 1/4	38 1/4	49 1/4	2	34
45	E	4140°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Cen	2 1/2	1130*	26 1/4	38 1/4	49 1/4	2	35
45	E	4140°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Hol	1 1/2	1210	54	23	50 1/2	2	36
45	E	4140°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Cen	2 1/2	1210	54	23	50 1/2	2	37
45	E	4140°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Alg	2 1/2	1130	26 1/4	38 1/4	51 1/4	1	38
45	E	4140	Ch	Al	89.0	1.50x4.44	3	3135	9	93.0	4140	....	3.00x2.09	7	3.25x1.67	3.25x2.38	acdefg	Hol	1 1/4	2150	30 1/2	48 5/8	60 1/4	1	39
(h)	E	4140	Ch	Al	145	1.62x4.93	4	3140	11 1/2	148	4140	....	3.24x2.06	7	3.50x2.10	3.50x3.05	acdefg	Cen	2 1/2	2150	30 1/2	48 5/8	60 1/4	1	40
(h)	E	4140	Ch	Al	146	1.62x4.93	4	3140	11 1/2	148	4140	....	3.24x2.06	7	3.50x2.10	3.50x3.05	acdefg	Cen	2 1/2	2150	30 1/2	48 5/8	60 1/4	1	41
(h)	E	4140	Ch	Al	141	1.62x4.93	4	3140	11 1/2	148	4140	....	3.24x2.06	7	3.50x2.10	3.50x3.05	acdfg	Hol	1 1/4	2150	30 1/2	48 5/8	60 1/4	1	42
(h)	E	4140	Ch	Al	141	1.62x4.93	4	3140	11 1/2	148	4140	....	3.24x2.06	7	3.50x2.10	3.50x3.05	acdfg	Cen	2 1/2	2150	30 1/2	48 5/8	60 1/4	1	43
30	Op	St	HG	CI	25	.687x2.50	3	3140	5 1/4	18	1045	Y	1.50x1.00	2	2.00x1.25	2.00x1.37	acg	Op	5/8	131	16 1/16	16 3/16	19 1/16	5,6	43
30	Op	Eat	HG	Al	28	.750x2.56	3	3140	6 3/4	21	1045	Y	1.75x1.12	2	2.00x1.56	2.00x1.62	acg	Op	3/4	270	17 3/4	18 5/8	20 1/4	4,5	44
30	Op	Eat	HG	CI	19	.687x2.20	3	3140	5 1/4	15	4140	N	1.50x1.00	3	2.00x1.31	2.00x1.37	acg	Op	Op	179	16 1/16	16 1/4	23 1/16	5,6	48
30	Op	Eat	HG	AC	21	.687x2.33	3	3140	5 1/4	15	4140	N	1.50x1.00	3	2.00x1.31	2.00x1.37	acg	Op	Op	179	16 1/16	16 1/4	23 1/16	5,6	46
30	Op	Eat	HG	Al	29.5	.750x2.81	3	3140	6 3/4	21	1045	Y	1.75x1.12	2	2.00x1.56	2.00x1.62	acg	Op	3/4	270	17 3/4	18 5/8	20 1/4	4,5	47
30	Op	Eat	HG	AC	28	.750x2.56	3	3140	6 3/4	21	GS‡	Op	1.75x1.12	3	2.00x1.56	2.00x1.62	acg	Op	Op	285	17 3/4	19 1/4	26 1/16	4,5	48
30	Op	Eat	HG	AC	29.5	.750x2.81	3	3140	6 3/4	21	CS‡	Op	1.75x1.12	3	2.00x1.56	2.00x1.62	acg	Op	Op	293	17 3/4	19 1/4	26 1/16	4,5	49
30	Op	Eat	HG	Al	29.5	.75x2.81	3	3140	6 3/4	21	4140	N	1.75x1.12	3	2.00x1.56	2.00x1.62	acdg	Op	Op	293	17 3/4	19 1/4	26 1/16	4,5	50
30	Op	Eat	HG	Al	31	1.00x2.90	4	3140	8	37	1046‡	Y	2.00x1.50	5	2.50x1.31	2.50x2.12	acg	Op	1 1/4	470	20 1/4	24 1/16	31 1/16	3,4,5	51
45	Op	Eat	HG	Al	31	1.00x2.90	4	3140	8	37	1046‡	Y	2.00x1.50	5	2.50x1.31	2.50x2.12	acg	Op	1 1/4	470	20 1/4	24 1/16	31 1/16	3,4,5	52
N	N	....	HG	Alt	33.2	1.13x2.84	4	3140	8	43.5	1046	....	2.00x1.31	5	2.50x1.16	2.50x1.16	abcdefg	Op	....	500	22 1/16	33	31 1/16	....	82
45	Op	Eat	HG	Al	37.5	1.00x3.25	4	3140	8	37	1046‡	Y	2.00x1.50	5	2.50x1.31	2.50x2.12	acg	Op	1 1/4	470	20 1/4	24 1/16	31 1/16	3,4,5	83
30	Op	Eat	HG	CI	26	.875x2.67	4	1035	7	26	1046‡	Op	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1 1/4	440	17 1/16	20 1/16	35 1/16	3,4,5	84
45	N	....	HG	Alt	40.3	1.13x3.03	4	3140	8	43.5	1046	....	2.00x1.31	5	2.50x1.16	2.50x1.16	abcdefg	....	....	500	22 1/16	33	31 1/16	....	85
30	Op	Eat	HG	Al	24	.875x2.81	4	1035	7	26	1046‡	Op	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1 1/4	440	17 1/16	20 1/16	35 1/16	3,4,5	86
45	Op	Eat	HG	Al	40.5	1.00x3.50	4	3140	8	37	1046‡	Y	2.00x1.50	6	2.50x1.31	2.50x2.12	acg	Op	1 1/4	470	20 1/4	24 1/16	31 1/16	3,4,5	87
30	Op	Eat	HG	Al	26	.875x2.92	4	1035	7	26	10•6‡	Op	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1 1/4	440	17 1/16	20 1/16	35 1/16	3,4,5	88
45	N	....	HG	Alt	43.4	1.13x3.34	4	3140	8	43.5	1046	....	2.00x1.31	5	2.50x1.16	2.50x1.16	abcdefg	....	....	500	22 1/16	33	31 1/16	....	89
30	Op	Eat	HG	Al	26	.875x2.92	4	1035	7	26	1046‡	Op	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1 1/4	440	17 1/16	20 1/16	35 1/16	3,4,5	60
30	Op	Eat	HG	Al	28	.875x2.92	4	1035	7	28	1046‡	Y	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1 1/4	440	17 1/16	20 1/16	35 1/16	3,4,5	61
45	Op	Eat	HG	Al	31	1.00x2.92	4	3140	8	37	1046‡	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1 1/4	590	18 1/16	24 1/16	39	3,4,5	62
45	N	....	HG	Alt	33.2	1.13x2.84	4	3140	8	43.5	10•6	....	2.00x1.31	7	2.50x1.16	2.50x1.16	abcdefg	Op	1 7/16	650	22 1/16	34 1/16	40 3/16	2,3,4	63
45	Op	Eat	HG	Al	35.5	1.00x3.17	4	3140	8	37	1046‡	Op	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1 1/4	605	18 1/16	24 1/16	39	3,4,5	64
45	Op	Eat	HG	Al	37.5	1.00x3.26	4	3140	8	37	1046‡	Op	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1 1/4	605	18 1/16	24 1/16	39	3,4,5	65
45	N	....	HG	Alt	40.3	1.13x3.03	4	3140	8	43.5	1046	....	2.00x1.31	7	2.50x1.16	2.50x1.16	abcdefg	....	....	650	22 1/16	34 1/16	40 3/16	2,3,4	66
45	Op	Eat	HG	Al	40.5	1.00x3.51	4	3140	8	37	1046‡	Op	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1 1/4	605	18 1/16	24 1/16	39	3,4,5	67
30	Op	Eat	HG	Al	44.5	1.12x3.44	4	3140	8	39.2	1046‡	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1 1/4	630	18 1/16	24 1/16	39	3,4,5	68
45	N	....	HG	Alt	43.4	1.13x3.34	4	3140	8	43.5	1046	....	2.00x1.31	7	2.50x1.16	2.50x1.16	abcdef	....	....	650	22 1/16	34 1/16	40 3/16	2,3,4	69
45	Op	Eat	HG	Al	44	1.12x3.56	4	3140	8 7/8	50	1046‡	Y	2.25x1.50	7	2.62x1.75	2.62x2.75	acg	Op	1 1/2	811	26 1/16	28 1/16	42 1/16	2,3	70
45	Op	Eat	HG	Al	50	1.12x3.70	4	1035	9 1/8	50	1046‡	Y	2.25x1.50	7	2.62x1.75	2.62x2.75	acg	Op	1 1/2	820	23 1/16	28 1/16	42 1/16	2,3	71
30	Op	Eat	HG	Al	50	1.31x3.62	4	4140	8 7/8	50	1046‡	Y	2.25x1.50	7	2.62x1.75	2.62x2.75	acg	Op	1 3/4	825	26 1/16	28 1/16	42 1/16	2,3	72
(h)	Op	Eat	HG	Al	63.5	1.31x3.62	4	3140	9 3/4	76.9	1045‡	Y	2.62x2.00	7	3.00x1.93	3.00x2.93	acg	Op	Op	1220	27 1/16	34 1/16	47 1/16	2	73
(h)	Op	Eat	HG	Al	65	1.31x3.62	4	3140	9 3/4	76.9	1045‡	Y	2.62x2.00	7	3.00x1.93	3.00x2.93	acg	Op	Op	1220	27 1/16	34 1/16	47 1/16	2	74
45	Op	Eat	HG	Al	60	1.25x3.98	5	3140	9 3/4	78	1046‡	Op	2.62x2.00	7	3.00x1.93	3.00x2.93	acg	Op	1 3/4	1000	26 1/16	32 1/16	46 1/16	2,3	75
45	Op	Eat	HG	Al	63	1.25x4.07	5	3140	9 3/4	78	1046‡	Op	2.62x2.00	7	3.00x1.93	3.00x2.93	acg	Op	1 3/4	1010	26 1/16	32 1/16	46 1/16	2,3	76
45	Op	Eat	HG	Al	65	1.25x4.07	5	E-4342	9 3/4	97	CS‡	Op	3.00x2.00	7	3.50x1.93	3.50x2.93	acg	Op	1 3/4	1195	25 1/16	35 1/16	46 1/16	1,2	77
(h)	Op	Eat	HG	Al	66	1.25x4.20	4	E-4342	9 3/4	97	CS‡	Op	3.00x2.00	7	3.50x1.93	3.50x2.93	acg	Op	1 3/4	1195	25 1/16	35 1/16	46 1/16	1,2	78
(h)	Op	Eat	HG	Al	66	1.50x4.11	4	E-4342	9 3/4	97	CS‡	Y	3.00x2.00	7	3.50x1.93	3.50x2.93	acg	Op	2	1320	27 1/16	38 1/16	47 1/16	1,2	79
30	Op	Eat	HG	Al	98	1.50x4.43	4	3140	12	166	1046‡	Op	3.00x2.25	7	3.50x2.37	3.50x3.50	acg	Op	2	1810	29 1/16	40 1/16	58 1/16	00,0,1	80
30	Op	Eat	HG	Al	108	1.50x4.56	4	3140	12	166	1046‡	Op	3.00x2.25	7	3.50x2.37	3.50x3.50	acg	Op	2	1810	29 1/16	40 1/16	58 1/16	00,0,1	81
30	Op	Eat	HG	Atn	138	1.75x4.56	4	EFS	12	187	CS	....	3.31x2.25	7	3.75x2.37	3.75x3.50	acg	Op	2	2360	29 1/16	40 1/16	58 1/16	00,0,1	82
30	Op	Eat	HG	Al	119	1.50x4.81	4	3140	12	166	1046‡	Op	3.00x2.25	7	3.50x2.37	3.50x3.50	acg	Op	2 1/2	1630	29 1/16	40 1/16	58 1/16	00,0,1	84
30	Op	Eat	HG	Atn	150	1.75x4.78	4	EFS	12	187	CS	....	3.31x2.25	7	3.75x2.37	3.75x3.50	acg	Op	2 1/2	2370	29 1/16	40 1/16	58 1/16	00,0,1	85
30	Op	Eat	HG	Al	126	1.50x5.06	4	3140	12	166	1046‡	Op	3.00x2.25	7	3.50x2.37	3.50x3.50	acg	Op	2 1/2	1630	29 1/16	40 1/16	58 1/16	00,0,1	86
30	Op	Eat	HG	Atn	159	1.75x5.00	4	EFS	12	187	CS	....	3.31x2.25	7	3.75x2.37	3.75x3.50	acg	Op	2 1/2	2380	29 1/16	40 1/16	58 1/16	00,0,1	86

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

For Directory of the Engine Manufacturers listed above, see Table of Contents

• GASOLINE ENGINES •

1957 AUTOMOTIVE

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	International U-1	Tr,Ind	4-2⅝x2⅞	17-2500	16.5-2500	59.5	7.00	39.5-1600 (BE)	N	In	L	CNS	1.10	.910	.980	.790	.222	.222	.310	.310
2	U-123	Tr,Ind	4-3½x4	34.2-2000	32.4-2000	123.0	6.47	97.8-1180 (BE)	W	In	I	Sil	1.34	1.16	1.19	1.00	.261	.261	.341	.341
3	U-175	Tr,Ind	4-3⅝x4½	51.5-2000	50-2000	175.0	7.00	150-1100 (BE)	D	In	I	Sil	1.50	1.38	1.35	1.23	.388	.388	.341	.341
4	U-261	Tr,Ind	4-4⅛x5½	70.5-1800	67.5-1800	261.0	6.60	237-1000 (BE)	D	In	I	CNS	1.81	1.66	1.59	1.44	.438	.438	.372	.370
5	U-220	T,Ind	6-3⅛x3½	72-2400	68-2400	220.5	6.50	177-1200 (BE)	N	In	I	CNS	1.66	1.52	1.50	1.31	.397	.397	.372	.370
6	U-284-6	T,Ind	6-3⅛x4½	83-2400	78-2400	284.0	7.00	198-1400 (BE)	N	In	I	CNS	1.78	1.52	1.63	1.31	.240	.240	.372	.372
7	U-308	T,Ind	6-3⅛x4½	92-2400	87.5-2400	308.0	6.50	230-1200 (BE)	N	In	I	Sil	1.81	1.61	1.50	1.44	.406	.406	.372	.372
8	U-372	T,Ind	6-4⅝x4½	110-2200	104-2200	372.1	6.50	288-1200 (BE)	D	In	I	Sil°	2.25	1.55	2.00	1.60	.449	.449	.434	.434
9	U-450	T,Ind	6-4⅝x5	139-2200	126-2200	450.9	6.50	348-1350 (BE)	D	In	I	Sil°	2.25	1.55	2.00	1.60	.449	.449	.434	.434
10	U-1091	Ind	6-5⅝x7	214-1600	200-1600	1090.6	7.50	835- 800 (BE)	D	In	I	CNS	2.53	2.09	2.31	1.88	.625	.625	.495	.494
11	U-501	T,Ind	6-4½x5¼	141-2200	131-2200	501.0	6.50	394-1200 (BE)	N	In	I	Sil	2.25	1.78	1.94	1.50	.450	.450	.435	.434
12	Lathrop LH-4	M	4-3¼x4		45-2600	133.0		92-2000 (EA)	N	In		CNS			1.25	1.22	.312	.312	.312	.312
13	LH-Master	M	4-4x4¼		70-2500	214.0			N	In	L	CNS	1.62	1.75	1.50	1.37	.375	.375	.375	.375
14	LH-6	M	6-3⅜x4¼		64-2200	282.0		173- 550 (EA)	N	In	L	CNS	1.68	1.56	1.50	1.37	.312	.312	.375	.375
15	LH-6 DeLuxe	M	6-4x4¼		120-3000	320.0		226-2500 (EA)	N	In	L	CNS	1.75	1.62	1.50	1.37	.356	.356	.375	.375
16	LH-Super	M	6-4x4½		132-3200	339.0		132-3200 (EA)	N	In	L	CNS	1.75	1.62	1.50	1.37	.375	.375	.375	.375
17	.125 Mystic	M	6-4⅜x5½		130-1800	584.7		379- 900 (EA)	N	Se	L	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
18	.175 Mystic	M	6-5⅛x6½		175-1535	1012.8		640-1100 (EA)	N	Se	L	CNS	2.68	2.68	2.31	2.31	.437	.437	.500	.500
19	LH-Atom	M	6-3⅜x4¼		90-3000	282.0			S	In	L	CNS	1.75	1.62	1.50	1.37	.312	.312	.375	.375
20	LH-Atom Special	M	6-3⅜x4¼		100-3000	282.0			S	In	L	CNS			1.50	1.37				
21	LH-Super Special	M	6-4x4½		145-3000	339.0			S	In	L	CNS	1.81	1.66	1.50	1.37				
22	Le Roi H540	Tr,Ind	8-4⅛x4¼	189-2800	177-2600	540.0	6.70	421-1600 (EA)	W	In	I	2112	1.94	1.50	1.62	1.37	.410	.410	.373	.372
23	TH540	T,B	8-4⅛x4¼	206-3000		540.0	6.70	450-1800 (BE)	W	In	I	2112(y)	1.94	1.54	1.62	1.37	.410	.410	.373	.373
24	H844	Tr,Ind	8-5⅛x4⅞	286-2400	270-2400	844.0	6.70	710-1700 (BE)	W	In	I	21-4N°	2.26	1.79	2.18	1.63	.450	.450	.435	.434
25	TH844	T,B	8-5¼x4⅞	298-2600	285-2600	844.0	6.70	730-1700 (BE)	W	In	I	2112 (y)	2.26	1.79	2.18	1.63	.450	.450	.435	.434
26	H884	Tr,Ind	8-5⅜x4⅞	330-2600	300-2600	884.0	7.62	780-1800 (BE)	W	In	I	2112 (y)	2.26	2.00	2.12	1.86	.480	.480	.434	.434
27	TH884	T,B	8-5⅜x4⅞	330-2600	300-2600	884.0	7.62	780-1800 (BE)	W	In	I	2112 (y)	2.26	2.00	2.12	1.86	.480	.480	.434	.434
28	F1500	Ind	6-6⅝x7	215-1200	205-1200	1503.0	5.06	1090- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
29	F1500	Ind	8-6⅝x7	230-1200	220-1200	1503.0	6.20	1165- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
30	H2000	Ind	8-6⅝x7	295-1200	275-1200	2004.0	5.06	1485- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
31	H2000	Ind	8-6⅝x7	300-1200	280-1200	2004.0	6.20	1590- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
32	L3000	Ind	12-6⅝x7	435-1200	410-1200	3006.0	5.06	2200- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
33	L3000	Ind	12-6⅝x7	470-1200	435-1200	3006.0	6.20	2360- 700 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
34	L3460	Ind	12-7¼x7	595-1350	586-1350	3468.0	4.57	2570- 900 (BE)	W	In	I	Sil	3.37	2.84	2.75	2.62	.625	.625	.622	.621
35	L3460	Ind	12-7¼x7	660-1350	640-1350	3468.0	6.73	2710- 900 (EA)	W	In	I	Sil	3.37	2.84	2.75	2.62	.625	.625	.622	.621
36	L4000	Ind	12-7½x7½	656-1350	636-1350	4018.0	4.95	2950- 800 (BE)	W	In	I	Sil	3.37	2.84	2.75	2.62	.625	.625	.623	.622
37	L4000	Ind	12-7½x7½	734-1350	713-1350	4018.0	7.00	3305- 800 (BE)	W	In	I	Sil	3.37	2.84	2.75	2.62	.625	.625	.623	.622
38	Mack Magnadyne EN291	T	6-3⅞x4⅝	107-2800	100-2800	290.0	6.90	210-1200 (EA)	N	In	L	2112°	2.01	1.53	1.75	1.38	.430	.430	.435	.433
39	Magnadyne EN331	T	6-4x4⅝	122-2800	114-2800	330.0	6.90	264-1400 (EA)	N	In	L	2112°	2.01	1.53	1.75	1.38	.430	.430	.435	.433
40	Magnadyne EN401	T	6-4⅛x5½	150-2800	142-2800	401.0	7.29	330-1400 (BE)	N	In	L	Sil(x)°	2.00	1.63	1.75	1.44	.430	.430	.438	.438
41	Thermodyne EN464A	T	6-4⅛x5	165-2800	167-2800	464.0	7.54	380-1400 (BE)	N	In	I	Sil(x)°	2.10	1.54	1.88	1.38	.471	.471	.438	.438
42	Thermodyne EN707B	T	6-5x6	196-2000	179-2000	707.0	6.42	560-1100 (EA)	N	In	I	Sil(x)°	2.27	1.96	2.06	1.75	.500	.500	.496	.496
43	Minneapolis-Moline 165A	Tr	4-3⅝x4	48-1500		165.0	7.35	140-1200 (BE)	N	Se	I	2112N	1.47	1.38	1.25	1.17	.469	.470	.341	.341
44	206H	Ind,Tr	4-3⅝x5	51-1550	45-1550	206.5	7.30	178-1400 (BE)	N	Se	I	2112N	1.47	1.38	1.25	1.17	.469	.470	.341	.341
45	V206B	Tr	4-3⅝x5	48-1550	45-1550	206.5	7.30	168-1100 (BE)	N	Se	I	2112N	1.47	1.38	1.25	1.17	.469	.470	.341	.341
46	283C	Tr,Ind	4-4¼x5	59-1300	57-1300	283.7	6.35	240-1200 (BE)	N	Se	I	2112N	1.72	1.59	1.50	1.37	.494	.495	.434	.434
47	403C	Tr,Ind	4-4⅝x6	72-1200	68-1200	403.2	5.74	335- 900 (BE)	N	Se	I	2112N	1.72	1.59	1.50	1.37	.494	.495	.434	.434
48	425A	Ind	6-4¼x5	83-1400	78-1400	425.5	6.35	325- 900 (BE)	N	Se	I	2112N	1.72	1.59	1.50	1.37	.494	.495	.434	.434
49	606A	Ind	6-4⅝x6	105-1200	99-1200	604.8	5.74	465- 800 (BE)	N	Se	I	2112N	1.72	1.59	1.50	1.37	.494	.495	.434	.434
50	800	Ind	6-5⅛x6	149-1300	142-1300	800.0	5.30	620-1100 (BE)	N	Se	I	2112°	1.84	1.72	1.62	1.50	.494	.495	.434	.434
51	1210	Ind	12-4⅝x6	200-1200	186-1200	1210.0	5.74	880- 800 (BE)	N	Se	I	2112N	1.72	1.59	1.50	1.37	.494	.495	.434	.434
52	*21600	Ind	12-5⅛x6	291-1300		1600.0	6.30	1200- 800 (BE)	N	Se	I	2112°	1.72	1.59	1.50	1.37	.494	.495	.434	.434
53	Norberg Bluefin Y230	M	6-3⅞x4½		105-3400	230.0	7.29	190-1600 (EA)	N	In	L	2112	1.61	1.38	1.50	1.25	.349	.349	.310	.310
54	Arrow 230	M	6-3⅞x4½		95-3200	230.0	7.29	173-1500 (EA)	N	In	L	2112	1.61	1.39	1.50	1.25	.311	.311	.310	.310
55	Marlin 320	M	6-4x4¾		110-2500	320.0	6.84	243-1600 (EA)	N	In	L	2112	1.75	1.62	1.50	1.37	.356	.356	.372	.372
56	Knight 350	M	6-4x4½		155-3200	340.0	7.20	283-1400 (EA)	W	In	L	Aus	1.83	1.66	1.72	1.50	.400	.400	.372	.372
57	Bullet 240	M	6-3⅞x4⅜		110-3400	236.7	7.47	193-1500 (EA)	N	In	L	Aus	1.61	1.39	1.50	1.25	.349	.349	.310	.310
58	Tarpon 330	M	6-4x4½		130-3000	320.4	6.84	239-2400 (EA)	N	In	L	2112	1.83	1.66	1.72	1.50	.356	.356	.372	.372
59	Colt 130	M	4-3½x4		60-3200	132.7	7.50	108-2400 (EA)	N	In	L	2112	1.48	1.36	1.25	1.12	.312	.312	.310	.310
60	Oliver Super 55HC	Tr	4-3⅛x3¾		38.5-2000	144.0	7.30	110-1100 (EA)	W	In	I	Sil	1.40	1.26	1.25	1.12	.360	.360	.373	.372
61	Super 66HC	Tr	4-3⅛x3¾		38.5-2000	144.0	7.30		W	In	I	Sil	1.40	1.26	1.25	1.12	.360	.360	.373	.372
62	Super 77HC	Tr	6-3⅛x3¾		48-1600	216.5	7.30	166-1000 (EA)	W	In	I	Sil	1.40	1.26	1.25	1.12	.313	.281	.373	.372
63	Super 88HC	Tr	6-3⅜x4		58.5-1600	265.1	7.30	204-1000 (EA)	W	In	I	Sil	1.51	1.39	1.37	1.24	.344	.344	.373	.372
64	Super 99HC	Tr	6-4x4		69-1675	302.0	6.20	232- 800 (EA)	D	In	I	Sil	1.84	1.59	1.68	1.43	.344	.344	.373	.372
65	Super 166HC	Ind	4-3⅛x3¾		37-2000	144.0	7.00	107-1000 (EA)	W	In	I	Sil	1.41	1.28	1.25	1.13	.344	.344	.373	.372
66	Super 177HC	Ind	6-3⅛x3¾		52-2000	216.0	7.00	164-1000 (EA)	W	In	I	Sil	1.41	1.28	1.25	1.13	.344	.344	.375	.372
67	Super 188HC	Ind	6-3⅜x4		62-2000	265.0	7.00	204-1000 (EA)	W	In	I	Sil	1.53	1.41	1.38	1.38	.344	.344	.373	.372
68	Super 199HC	Ind	6-4x4		74.6-2000	302.0	6.20	232- 800 (EA)	D	In	I	Sil	1.84	1.59	1.68	1.43	.344	.344	.373	.372
69	Palmer 25	M	1-3⅛x3¼		6-2500	29.0	5.40	6-2500 (EA)	N	Se	L	Sil	1.34	1.34	1.15	1.15	.281	.281	.310	.310
70	60	M	4-2½x2¾		22-3000	58.5	6.50	34-2000 (EA)	N	In	L	CNS	1.10	.910	.980	.790	.222	.222	.310	.310
71	134	M	4-3½x4		60-3000	133.0	7.20	92-2000 (EA)	N	In	L	CNS	1.48	1.35	1.25	1.12	.312	.312	.310	.310
72	240	M	6-3½x4½		115-3200	240.3	6.50	196-1800 (EA)	N	In	I	CNS	1.86	1.52	1.50	1.38	.398	.398	.372	.370
73	264	M	6-3½x4½		125-3400	264.0	6.50	234-2000 (EA)	N	In	I	21-4NS	1.66	1.52	1.50	1.38	.398	.398	.372	.370
74	308	M	6-3½x4½		145-3400	308.0	6.50	274-2000 (EA)	N	In	I	21-4NS	1.81		1.69		.407		.372	
75	IHV-401	M	8-4⅛x3⅝		145-3400	401.0	7.50	355-2000 (EA)	N	In	I	St	2.08	1.81	1.94	1.63	.426	.426	.435	.434
76	IHV-461	M	8-4½x4⅛		250-3600	461.0	7.00	420-1600 (EA)	N	In	I	St	2.08	1.81	1.94	1.63	.426	.426	.435	.434
77	Red Wing Arrowhead Twin	M	2-3⅝x4¾	11-1100	10-1100	105.0	4.00	54- 800 (EA)	N	Se	L	NCI	1.62	1.62	1.43	1.43	.300	.300	.375	.375
78	Meteor 20	M	4-2½x3⅛	16-2600	16-2600	61.3	5.70	40-1700 (BE)	N	Se	L	Sil	1.12	.937	1.00	.812	.226	.250	.312	.312
79	Arrowhead 40	M	4-3⅛x4	38-2600	35-2600	133.0	5.58	92-1200 (EA)	N	In	L	Sil	1.34	1.34	1.18	1.18	.281	.281	.312	.312
80	Arrowhead 50	M	4-3⅝x4½	43-2200	37-2200	186.0	5.50	128- 900 (EA)	N	In	L	Sil	1.56	1.56	1.37	1.37	.281	.281	.375	.375
81	F	M	4-4⅛x5	39-1400	36-1400	259.0	4.00	142-1000 (EA)	N	Se	L	NCI	1.93	1.93	1.75	1.75	.300	.300	.375	.375

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

GASOLINE ENGINES—*continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT							CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats													Crank-Pin	MAIN BEARINGS											
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
45	N	.....	HG	CI	20.0	.688x2.19	3	1035	5	15.4	1046‡	Y	1.50x.870	3	1.62x1.30	1.62x1.34	acdg	Own	⅝	279*	16⅝	25⅛	26⅛	5	1
45	N	.....	HG	Al	13.9**	.919x2.49	3	1040	7¼	33.2	1046	.....	1.75x1.56	3	2.13x1.59	2.13x1.85	acdfg	C-Z	⅞	525*	20¼	33½	30⅝	4	2
45	E	St	HG	Al	20.4	.875x2.95	4	SF	8	56.8	1046	.....	2.30x1.50	3	2.56x1.50	2.56x1.50	acfg	Own	1¼	700	18¼	34¼	33½	4	3
45	E	HI	HG	Al	53.0	1.31x3.25	4	SF	10	85.0	1046	.....	2.56x1.93	3	2.81x1.93	2.81x1.81	acdfg	Own	1¼	1010	20⅝	38⅝	37	2	4
30	E	DC	HG	Al	33.0	.875x2.95	3	1037	6	40.6	1046	Y	2.38x1.16	4	2.75x1.69	2.75x2.17	abcdfg	Zen	1¼	810*	21	33	41¾	3	8
45	E	Sil	HG	Al	30.4	.875x2.95	3	SF	6	40.0	1046	.....	2.38x	4	2.75x1.30	2.75x1.89	abcdfg	Zen	1¼	975	28	50	51¾	3	6
30	E	DC	HG	Al	32.0	.875x2.95	4	SF	6	43.2	1046	.....	2.13x	4	2.70x1.13	2.70x1.94	abcdfg	Zen	1½	1010	21½	35⅝	42½	3	7
44	E	St	HG	Al	62.0	1.11x3.80	4	8632	9	61.0	1046‡	Y	2.75x1.38	7	3.25x1.66	3.25x2.37	abcdfg	Zen	1½	1240*	25⅜	37½	47⅜	1	9
44	E	St	HG	Al	57.0	1.11x3.80	4	8632	9	61.0	1046	Y	2.75x1.38	7	3.25x1.81	3.25x2.37	abcdfg	Zen	1½	1250*	25⅛	37⅝	47½	1	9
45	N	Sil	HG	Al	119.2	1.88x5.00	5	1040	13¼	253.5	1046	Y	3.63x2.38	7	4.13x1.75	4.13x1.75	abcdfg	Ens	2½	3825*	32	55½	71⅛	0	10
45	E	Sil	HG	Al	57.6	1.11x3.80	3	SF	9	60.8	1046	.....	2.75x	7	3.25x1.34	3.25x1.84	abcdfg	Zen	1½	1320	25⅛	37½	47½	1	11
30	.....	.....	HG	Al		.750x2.81	3	AS	6⅛		CNS	N	1.87x2.75	4			acg	Zen	1	440	17½	14⅝	40½	.....	12
30	N	.....	HG	Al	40	1.00x3.50	4	AS	8	36	CNS	.....	2.00x1.50	5	2.50x1.31	2.50x2.12	acdg	Zen	1¼	795	20	28½	38¼	.....	13
30	.....	.....	HG	Al		1.00x3.50	3	AS	8	.....	CNS	N	2.75x2.75	5	3.00x3.50	3.00x3.50	acdg	Zen	1¼	830	21½	17	51	.....	14
30	E	Spec	HG	Al	40	1.00x3.50	4	DFS	8	36	Spec	N	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Zen	1½	820	21½	25	51	.....	18
30	.....	.....	HG	Al	96	1.37x3.87	4	Dur	8	38	CNS	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdeg	Zen	1¾	840	21½	25	47	.....	16
45	.....	.....	HG	CI	104	1.37x4.12	4	Dur	12¼	68	CNS	N	2.25x2.37	7	2.75x3.25	2.75x2.12	acdg	Hol		1700	24½	27¾	68	.....	17
45	.....	.....	HG	CI	176	1.50x5.12	4	AS	13¼	164	CNS	N	2.75x2.75	7	3.00x3.37	3.00x3.25	acdg	Hol	.....	2460	24½	39⅝	78½	.....	18
45	.....	.....	HG	Al	40.0	1.00x3.50	4	DFS	8	36.0	CNS	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdg	.....	1½	876	20	25	47	.....	19
.....	.....	.....	HG	Al	40.0	1.00x3.50	4	DFS	8	36.0	CNS	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdg	Zen	1½	876	20	25	47	.....	20
.....	.....	.....	HG	Al	40.0	1.00x3.50	4	DFS	8	36.0	CNS	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdg	.....	2	916	20	25	47	.....	21
45	E	T-12	HG	Al	62.0	1.25x3.93	4	1040	8½	49.0	1046	Y	2.75x2.75	5	3.25x1.12	3.25x1.12	acdef	Zen	1¼	1300	30⅝	39¼	42¾	1,2	22
45	Bo	Sil°	HG	Al	62.0	1.25x3.93	4	1040	8½	49.0	1046	Y	2.75x2.75	5	3.25x1.12	3.25x1.12	acdef	Zen	2	1355	30⅝	43	44⅜	2	23
45	E	Sil°	HG	Al	99.0	1.50x4.56	4	1040	9¾	70.4	1046	Y	3.25x3.13	5	3.75x1.39	3.75x1.39	acdef	Zen	1¾	1870*	33½	49	49½	0,1	24
45	E	Sil°	HG	Al	99.0	1.50x4.56	4	1040	9¾	70.4	1046	Y	3.25x3.13	5	3.75x1.39	3.75x1.39	acdef	Zen	1¾	1900*	33½	46	48⅝	1	25
45	Bo	St	HG	Al	96.6	1.50x4.34	4	1040	9¾	70.4	1046	Y	3.25x3.13	5	3.75x1.39	3.75x1.39	acdef	Ens	2½	1900	33½	46	48⅝	0,1	26
45	Bo	St	HG	Al	96.6	1.50x4.34	4	1040	9¾	70.4	1046	Y	3.25x3.13	5	3.75x1.39	3.75x1.39	acdef	Zen	1¾	1900	33½	46	48⅝	1	27
45	E	T-12	HG	Al	205.0	1.75x6.12	4	1045	14	236.0	4140	N	3.50x3.75	4	3.93x5.25	3.93x5.25	acdf	Zen(2)	1¾	3750	43	59	80	0,00	28
45	E	T-12	HG	Al	227.0	1.75x6.12	4	1045	14	236.0	4140	N	3.50x3.75	4	3.93x5.25	3.93x5.25	acdf	Ens(2)	1¾	3750	43	59	80	0,00	29
45	E	T-12	HG	Al	205.0	1.75x6.12	4	3140	15	240.0	1045	Y	3.50x3.75	3	3.93x5.25	3.93x5.25	acdf	Zen(2)	2	3900	45	66	84	00	30
45	E	T-12	HG	Al	227.0	1.75x6.12	4	3140	15	240.0	1045	Y	3.50x3.75	3	3.93x5.25	3.93x5.25	acdf	Ens	3	3900	45	67	84	00	31
45	E	T-12	HG	Al	205.0	1.75x6.12	4	3140	15	240.0	4140	N	3.50x3.75	4	3.93x5.25	3.93x5.25	acdf	Zen(4)	1¾	5300	45	65	78	00	33
45	E	T-12	HG	Al	227.0	1.75x6.12	4	3140	15	240.0	4140	N	3.50x3.75	4	3.93x5.25	3.93x5.25	acdf	Ens	3½	5300	45	65	78	00	33
45	E	3140°	HG	Al	256.0	2.25x6.37	4	1040	15	282.0	1046	Y	5.00x4.75	8	5.50x2.38	5.50x4.31	acdef	Zen(4)	2	10300	49	75	99½	00	34
45	Bo	3140°	HG	Al	256.0	2.25x6.37	4	1040	15	282.0	1046	Y	5.00x4.75	8	5.50x2.38	5.50x4.31	acdef	Ens(2)	3½	10300	49	74½	99½	00	35
45	E	3140°	HG	Al	263.0	2.25x6.36	4	1040	15	282.0	1046	Y	5.00x4.75	8	5.50x2.38	5.50x4.31	acdef	Zen(4)	2	11500	49	75	130¼	00	36
45	Bo	3140°	HG	Al	263.0	2.25x6.36	4	1040	15	282.0	1046	Y	5.00x4.75	8	5.50x2.38	5.50x4.31	acdef	Ens(2)	3½	11500	49	47½	130½	00	37
(h)	E	Nif°(x	HG	Al	47	1.12x3.18	5	4130	10½	64	1046‡	Y	2.38x1.34	7	3.00x1.41	3.00x2.12	acdefg	Zen	1¼	920	28⅛	35 7/16	44⅛	3	38
(h)	E	Nif°	HG	Al	52	1.12x3.45	5	4130	10½	64	1046‡	Y	2.38x1.34	7	3.00x1.41	3.00x2.12	acdefg	Zen	1¼	920	28⅛	35 7/16	44⅛	3	39
(h)	E	Nif°(x	HG	Al	51	1.13x3.45	5	4130	10⅞	64	1046‡	Y	2.38x1.34	7	3.00x1.41	3.50x2.13	abcdfg	Zen	1¼	1070	28⅝	38⅛	45⅝	3	40
(h)	E	Nif°(x	HG	Al	72	1.31x3.56	4	4130	10⅞	88.8	1046‡	Y	2.75x1.58	7	3.50x1.69	3.50x2.22	abcdfg	Zen	1½	1522	26	43⅞	49 11/16	2	41
(h)	E	Nif°(x	HG	Alt	91	1.43x4.43	5	4130	11⅛	116	1050‡	Y	3.00x1.91	7	4.00x1.57	4.00x2.58	acdefg	Zen	1¾	1902	28.06	51.75	53 3/32	1	42
45	E	CAI	HG	CI	53.3	1.00x3.00	4	1041	9¼	58.0	1046	.....	2.62x1.50	3	2.75x1.75	3.00x2.18	acdefg	MaS	1	660*	20	38⅛	38⅛	.....	43
45	E	CAI	HG	CI	53.3	1.00x3.00	4	1041	8⅝	50.0	1046	.....	2.62x1.50	3	2.75x1.75	3.00x2.18	acdefg	MaS	1	660*	20	38⅛	38⅛	4	44
45	E	CAI	HG	CI	53.5	1.00x3.00	4	1041	8⅝	50.0	1046	.....	2.62x1.50	2	RB	RB	acdefg	MaS	1	680*	33	34	31½	.....	45
45	E	St	HG	CI	89.0	1.25x3.75	4	1041	10	94.0	1046	.....	2.57x2.50	3	2.91x2.68	2.91x3.50	acdefg	MaS	1¼	u1350*	24⅞	24⅞	42⅝	2	46
45	E	St	HG	Al	63.3	1.25x3.93	4	1041	11⅛	123.0	1046	.....	2.75x2.38	3	2.91x2.68	2.91x3.50	acdefg	MaS	1¼	u1440*	24⅛	43¼	42⅞	2	47
45	E	St	HG	CI	89.0	1.25x3.75	4	1041	10	94.0	1046	.....	2.57x2.50	4	2.91x2.69	2.91x3.50	acdefg	Zen	1½	u2000*	24⅛	42⅝	56	2	48
45	E	St	HG	CI	122.0	1.25x4.13	4	1041	11¼	123.0	1045	.....	2.75x2.38	4	2.91x2.69	2.91x3.50	acdefg	Zen	1½	u2268*	26¼	45	56⅜	1	49
45	E	St	HG	Al	112.0	1.75x4.53	4	1041	11¼	136.0	1046	.....	3.24x2.38	4	3.49x2.53	3.49x3.13	acdefg	Zen	1¾	u2475*	26¼	47⅝	61	1	50
45	E	CAI	HG	CI	122.0	1.25x4.13	4	1041	±11¼	±23.0	1045	.....	2.75x2.38	4	2.91x2.69	2.91x3.50	acdefg	Zen(2)	1½	5900*	45	70⅝	114⅜	.....	51
45	E	St	HG	Al	112.0	1.75x4.53	4	1041	11¼	145.0	1046	.....	3.24x2.38	4	3.49x2.53	3.49x3.13	acdefg	Ens(2)	1½	6325	44¼	72½	111⅜	.....	52
30	N	.....	HG	Al	26	.875x2.90	3	1035	7	26	1340‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acdgr	Zen	1½	714	24⅛	23⅛	43¼	6	53
30	N	.....	HG	Al	26	.875x2.90	3	1035	7	26	3140‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acdgr	Zen	1½	780	24⅛	23⅛	45⅝	6	54
30	N	.....	HG	Al	40.5	1.00x3.50	3	1040	8	37	3140‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	acdgr	Zen	1½	920	24⅛	25	49½	6	55
30	N	.....	HG	Al	44.5	1.12x3.44	3	1035	8	39.2	3140‡	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdgr	Zen	2	935	24⅛	25	47⅛	6	56
30	N	.....	HG	Alt	25	.875x2.90	3	1035	7	26	3140	Y	1.98x1.25	7	2.50x1.31	2.50x1.93	abcdgr	Zen	1½	744	24⅛	23⅛	43¼	6	57
30	N	.....	HG	Al	40.5	1.00x3.50	3	1040	8	37	3140‡	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	acdgr	Zen	1¾	925	24⅛	25	47⅛	6	58
30	N	.....	HG	Alt	21.0	.750x2.83	3	3140	6⅛	22.0	Ste‡	.....	1.75x1.12	3	1.98x1.62	1.98x1.37	acgr	Zen	1¼	456*	24⅛	21½	31 3/32	.....	59
45	E	Al	HG	Alt	.....	1.25x2.75	4	1048	6¾	43	1045	Y	2.25x1.38	3	2.25x1.63	2.25x1.63	acf	MaS	⅞	466	18½	28¼	30⅞	.....	60
45	E	Al	HG	Alt	.....	1.25x2.75	4	1048	6¾	43	1045	Y	2.25x1.38	3	2.25x1.63	2.25x1.63	acf	MaS	⅞	464	18½	28¼	30⅞	.....	61
45	E	Al	HG	Alt	.....	1.25x2.75	4	1048	6¾	43	1045	N	2.25x1.38	4	2.25x1.63	2.25x1.63	acf	M-Z	1	632	18½	27⅞	39⅞	.....	62
45	E	Al	HG	Alt	66.0	..25x3.00	4	1045	6¾	47	1045	N	2.44x1.38	4	2.63x1.75	2.63x1.75	acf	M-Z	1	682	18½	27⅞	41½	.....	63
45	E	A	HG	Al	66.0	1.25x3.44	4	1045	6¾	41	1045	.....	2.63x1.38	4	2.63x1.56	2.63x1.56	abcdfg	MaS	1¼	876	21¼	30⅜	43⅞	.....	64
45	E	Al	HG	Al	35.0	1.26x2.75	4	1045	6¾	43.0	1045	.....	2.25x1.38	3	2.25x1.44	2.25x1.44	acf	MaS	1	546	22	29½	30½	4	65
45	E	Al	HG	Al	35.0	1.25x2.75	4	1045	6¾	43.0	1045	.....	2.25x1.38	4	2.25x1.44	2.25x1.44	acfg	MaS	1	716	22	29½	40½	4	66
45	E	Al	HG	Al	62.0	1.25x3.00	4	1045	6¾	47.0	1045	.....	2.44x1.38	4	2.63x1.50	2.63x1.50	acfg	MaS	1	617	22	32⅛	41 11/32	3	67
(v)	E	Al	HG	Al	66.0	1.25x3.44	4	1045	6¾	41.0	1045	.....	2.25x1.38	4	2.63x1.56	2.63x1.56	abcdfg	MaS	1¼	876	22	33½	43 3/32	3	68
45	N	.....	HG	Al	14½	.75x2.75	3	1040	8	23½	Al	Y	1.25x1.31	2	◊	◊	PS	Zen	⅝	u180	15	18¾	24	.....	69
45	N	.....	HG	CI	20	.688x2.19	3		5	16	C1045	.....	1.50x.875	3	1.62x	1.62x	acd	Zen	⅞	350	21	.....	28⅝	N	70
30	N	.....	HG	Al	20½	.75x2.87	3	3140	6¾	23½	CS‡	N	1.75x1.12	3	2.00x1.56	2.00x1.62	acd	Zen	1¼	u445	19	20½	39	.....	71
30	E	Duc	HG	Al	.....	.875x2.95	4		6		C1046	.....	2.38x1.50	4	2.75x1.38	2.75x1.94	acdf	Zen	1½	850	24½	28	46	6	72
30	E	SAC	HG	Al	.....	.875x2.95	4	SF	6		1046	.....	2.38x1.50	4	2.75x1.38	2.75x1.94	acdfg	Zen	1½	850	24½	28	46	6	73
15	E	SAC	HG	Al	40.2	.919x3.20	4	SF	8		1046	.....	2.13x1.44	4	2.70x	2.70x	acdfg	Zen	1¾	920	24½	29½	46½	6	74
45	E	St	HG	Al	43.1	1.31x3.01	3	SF	8	50.4	C1046	.....	2.63x2.55	5	3.13x.969	3.13x.969	acdefg	Hol	.....	1600	38	38	57	2	75
45	E	St	HG	Al	43.1	1.31x3.01	3	SF	8	50.1	C1046	.....	2.63x2.55	5	3.13x.969	3.13x.969	acdefg	Hol	.....	1600	38	38	57	2	76
45	N	.....	HG	CIA	64	1.10x3.26	3	1045	8½	43	1045	N	1.50x2.12	2	1.50x3.00	1.50x3.00	Splash	Str	1	415	19½	22 13/16	38¼	.....	77
45	N	.....	HG	Al	8	.625x2.12	3	1045	6	14	1045	N	1.56x1.25	2	ND3207	ND3207	adg	MaS	¾	240	18¼	19 1/32	27 17/32	.....	78
45	E	CA	HG	CI	30	.875x2.75	3	1045	7¼	29	1045	N	1.75x1.25	3	2.12x1.43	2.12x1.18	abcdg	Zen	1	490	21 5/16	24 1/16	35	.....	79
45	E	CA	HG	CI	45	1.10x3.06	4	1045	8¾	46	1045	N	2.00x1.50	3	2.00x2.50	2.00x1.87	abcdg	Zen	1	610	19½	26¼	41	5	80
45	N	.....	HG	CIA	69	1.10x3.56	4	1045	10⅜	66	1045	N	2.00x2.25	3	2.00x4.18	2.00x3.50	acg	Str	1¼	830	20¼	26 11/16	54⅜	.....	81

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

• GASOLINE ENGINES •

1957 AUTOMOTIVE

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
	Red Wing—Cont'd																			
1	Arrowhead 100	M	8-4x4½	86-2600	83-2800	320.0	5.75	210-1000 (BE)	N	In	L	SII	1.68	1.43	1.50	1.25	.375	.375	.375	.375
2	Meteor 65	M	4-3½x4½		65-3200	141.0	6.50		N	In	L	2112N	1.48	1.35	1.25	1.12	.250	.250	.310	.310
3	Meteor 115	M	6-3 7/16x4¼		115-3400	236.7			N	In	L	2112N	1.64	1.44	1.50	1.25	.311	.311	.310	.310
4	Meteor 160	M	6-4x4½		160-3200	339.0			N	In	L	2112N	1.83	1.67	1.72	1.50	.356	.356	.373	.373
5	Rex OA-331	T,B	6-4½x4½	140-3200	128-3200	331.0	6.40	260-1200 (EA)	W	In	I	SII(x)	2.01	1.80	1.83	1.62	.420	.420	.435	.434
6	OA-292	T,B	6-3⅞x4½	124-3300	110-3300	292.0	6.55	218-1400 (EA)	W	In	I	SII(x)	2.01	1.80	1.83	1.62	.420	.420	.435	.434
7	OA-256	T,B	6-3⅝x4½	107-3400	93-3400	255.0	6.70	183-1200 (EA)	W	In	I	2112	2.01	1.80	1.83	1.62	.420	.420	.435	.434
8	*OA-331-LPG	T	6-4½x4½	142-3200	130-3200	331.0	8.20	258-1800 (BE)	W	In	I	2112	2.00	1.80	1.83	1.63	.420	.420	.438	.438
9	OH-170	T,B	6-4½x4½	170-3400	158-3400	331.0	7.50	297-1600 (BE)	W	In	I	SII(x)	2.00	1.80	1.83	1.63	.420	.440	.438	.439
10	*285-OA-LPG	T	6-3⅝x4½	100-3400	86-3400	255.0	7.15	182-1600 (BE)	W	In	I	2112	2.00	1.80	1.83	1.63	.420	.420	.438	.438
11	*OH-160-LPG	T	6-4½x4½	160-3300	146-3200	331.0	8.20	290-1200 (BE)	W	In	I	SII	2.00	1.79	1.83	1.62	.225	.238	.438	.438
12	OV-207	T	8-3⅞x4½	207-3400	186-3400	390.0	7.30	354-2400 (BE)	W	In	I	SII(x)	2.00	1.80	1.83	1.63	.441	.466	.438	.438
13	OV-235	T	8-4½x4½	235-3400	213-3400	440.0	7.30	412-2400 (BE)	W	In	I	SII(x)	2.00	1.80	1.83	1.63	.441	.466	.438	.438
14	*OV-220-LPG	T	8-4½x4½	220-3200	203-3200	440.0	8.50	405-2000 (BE)	W	In	I	SII	2.00	1.80	1.83	1.63	.441	.466	.438	.438
15	(w)OA-285	Ind	6-3⅝x4½	87-2500	78-2500	255.0	6.70	189-1100 (BE)	W	Se	I	2112	2.00	1.80	1.83	1.63			.438	.438
16	OA-292	Ind	6-3⅞x4½	103-2500	95-2500	292.0	6.55	224-1400 (BE)	W	Se	I	2112	2.00	1.80	1.88	1.63			.438	.438
17	(w)OA-331	Ind	6-4½x4½	122-2500	116-2500	331.0	6.40	264-1600 (BE)	W	Se	I	2112	2.00	1.80	1.83	1.63			.438	.438
18	(w)OH-331 Hi-Output	Ind	6-4½x4½	134-2500	126-2500	331.0	6.73	290-1400 (BE)	W	Se	I	2112	2.00	1.80	1.83	1.63			.438	.438
19	OV-390	Ind	8-3⅞x4½	164-2500	157-2500	390.0	7.30	345-2200 (BE)	W	Se	I	SII	2.00	1.80	1.83	1.63			.438	.438
20	(w)OV-440	Ind	8-4½x4½	189-2500	182-2500	440.0	7.30	405-2000 (BE)	W	Se	I	SII	2.00	1.80	1.83	1.63			.438	.438
21	Scripps 36	M	4-3½x4		50-3200	134.0	5.50	100-2000 (EA)	N	In	L	SII	1.48	1.35	1.25	1.12	.250	.250	.310	.310
22	90-97	M	6-3 7/16x4½		95-3000	230.0	7.20	187-1200 (EA)	N	In	L	SII	1.60	1.39	1.50	1.25	.311	.311	.310	.310
23	6-110	M	6-3 7/16x4¼		110-3800	236.0	6.50	195-2400 (EA)	N	In	L	Aus	1.61	1.39	1.50	1.25	.311	.311	.310	.310
24	104-105	M	6-4x4½		110-3000	320.0	5.63	239-1700 (EA)	N	In	L	SII	1.75	1.62	1.50	1.37	.359	.359	.373	.373
25	6-339	M	6-4x4½		140-3200	339.0	6.80	265-2000 (EA)	N	In	L	SII	1.83	1.67	1.72	1.50	.356	.356	.373	.373
26	152-153	M	6-4¼x5¼		185-3000	447.0	7.10	390-1600 (EA)	N	Se	L	SII	2.37	2.25			.375	.375	.437	.437
27	184, 5, 6, 7	M	6-4¼x5½		155-3000	447.0	6.20	330-1600 (EA)	N	Se	L	SII	2.25	2.25			.375	.375	.437	.437
28	168-169	M	6-4½x5¼		175-2100	549.0	5.75	410-1600 (EA)	N	Se	L	SII	2.37	2.28			.406	.375	.437	.437
29	178-179	M	6-4¾x5¾		200-2400	611.0	5.75	500-1600 (EA)	N	Se	L	SII	2.37	2.28			.405	.375	.437	.437
30	208-209	M	8-5x5¼		225-2400	678.0	6.25	540-1800 (EA)	N	Se	L	SII	2.50	2.37			.406	.375	.437	.437
31	302-303	M	12-4½x5¼		350-2600	894.0	7.10	790-1600 (EA)	N	Se	L	SII	2.37	2.25			.375	.375	.437	.437
32	304-306	M	12-4½x5¼		250-2400	894.0	6.20	640-1700 (EA)	N	Se	L	SII	2.25	2.25			.375	.375	.437	.437
33	306-307	M	12-4½x5¼		290-2600	894.0	6.20	660-1800 (EA)	N	Se	L	SII	2.25	2.25			.375	.375	.437	.437
34	4-60	M	4-3½x4		60-3200	134.0	6.80	100-2000	N	In	L	SII	1.48	1.35	1.25	1.12	.250	.250	.310	.310
35	Sterling Viking II-TC-8	Tr,Ind	8-8x9		450-1200	2714.0	††	2015- 900 (EA)	W	Se	I	SII	2.59	2.59			.556	.556	.557	.557
36	Viking II-TC-8	Tr,Ind	8-8x9		345- 900	2714.0	††	2015- 900 (EA)	W	Se	I	SII	2.59	2.59			.556	.556	.557	.557
37	Viking II-T-8	M	8-8x9		600-1200	3619.0	5.20	2685- 900 (EA)	W	Se	I	SII	2.59	2.59			.556	.556	.557	.557
38	Viking II-TC-8	Tr,Ind	8-8x9		600-1200	3619.0	††	2685- 900 (EA)	W	Se	I	SII	2.59	2.59			.556	.556	.557	.557
39	Viking II-TC-8	Tr,Ind	8-8x9		460- 900	3619.0	††	2685- 900 (EA)	W	Se	I	SII	2.59	2.59			.556	.556	.557	.557
40	Petrel-LC-6	Ind	6-8½x6		210-2000	780.0	6.00	550-1700 (EA)	N	Se	L	SII	2.25	2.25			.475	.475	.437	.437
41	Petrel-L-6	M	6-8½x6		258-2500	780.0	6.00	550-1700 (EA)	N	Se	L	SII	2.25	2.25			.583	.583	.437	.437
42	Studebaker 1E	T	6-3x4⅝	92-3800	83-3800	185.6	7.50	152-1800 (BE)	N	In	L	2112	1.34	1.28	1.19	1.13	.344	.344	.313	.313
43	4E	T	6-3½x4¼	106-3400	94-3200	245.6	7.50	204-1400 (BE)	N	In	L	2112	1.47	1.28	1.31	1.13	.344	.344	.344	.344
44	3E, 5E	T	8-3½x3¼	170-4200	141-3800	259.2	7.50	250-2800 (BE)	N	In	I	2112N	1.66	1.53	1.28	1.16	.359	.359	.344	.344
45	6E	T	8-3½x3½	182-4000	154-3800	289.0	7.50	288-2600 (BE)	N	In	I	2112N	1.66	1.53	1.28	1.16	.359	.359	.344	.344
46	Universal Blue Jacket-AFTL	M	2-3x3½		12-2200	49.5	5.79		N	In	L	SII	1.68	1.68	1.50	1.50	.250	.250	.375	.375
47	Atomic Four-UJ	M	4-2½x3½		25-3500	64.5	6.32		N	In	L	SII	1.21	1.03	1.06	.875	.240	.240	.312	.312
48	Atomic Four-UJVD	M	4-2½x3½		25-3500	64.5	6.32		N	In	L	SII	1.21	1.03	1.06	.875	.240	.240	.312	.312
49	Fisherman-WM	M	1-4½x4½		8-1200	67.6	5.02		N	In	L	SII	1.67	1.67	1.62	1.62	.250	.250	.375	.375
50	Utility Four-BN	M	4-2⅝x4		25-2500	95.0	4.70		N	In	L	SII	1.25	1.25	1.12	1.12	.234	.234	.312	.312
51	Blue Jacket Flexifour-BFA	M	4-3x3½		45-3800	99.0	6.54		N	In	L	SII	1.68	1.68	1.50	1.50	.312	.312	.375	.375
52	Unimite Four-HF	M	4-3½x4¼		65-3400	141.0			N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
53	Unimite Four-HFVD	M	4-3½x4¼		65-3400	141.0			N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
54	Blue Jacket Six-AMS	M	6-3x3½		60-3500	148.5	6.54		N	In	L	SII	1.68	1.68	1.50	1.50	.312	.312	.375	.375
55	Superfour-LSG	M	6-3½x4½		90-3000	149.3	5.70		N	Se	L	SII	1.56	1.56	1.37	1.37	.312	.312	.375	.375
56	Cruiser Six-HCS	M	6-3½x4½		90-3000	260.0	6.25		N	Se	L	SII	1.68	1.68	1.50	1.50	.337	.337	.375	.375
57	Sea Lion Six-LHS	M	6-3½x4½		110-3400	260.0	6.25		N	Se	L	SII	1.68	1.68	1.50	1.50	.337	.337	.375	.375
58	Explorer Six-OK, OKVD	M	6-3½x4¼		100-3200	230.0	7.50	186-1500 (EA)	N	In	L	2112N	1.64	1.40	1.50	1.25	.311	.311	.310	.310
59	Master Six-OL	M	6-3½x4¼		110-3200	237.0	7.50	192-1500 (EA)	N	In	L	2112N	1.64	1.40	1.50	1.25	.311	.311	.310	.310
60	Super Six-Com'dore-Z, ZVD	M	6-4x4½		145-3200	339.2	7.20	265-2000	N	In	L	Aus	1.83	1.67	1.72	1.50	.356	.356	.373	.373
61	Super Six-Stevedor-ZS	M	6-4x4½		130-2900	339.2			N	In	L	Aus	1.83	1.67	1.72	1.50	.356	.356	.373	.373
62	Waukesha (12) ICK	Ind	4-2½x3½	18-2600	16-2400	61.3	5.70	40-1700 (BE)	N	Se	L	SII	1.12	.937	1.00	.812	.228	.250	.312	.312
63	(12) FC	T,Tr,Ind	4-3¼x4	35-2400	30-2200	133.0	5.58	96-1200 (BE)	N	In	L	SII	1.34	1.34	1.18	1.18	.281	.281	.312	.312
64	(11) 180GL	T,Tr,Ind	4-3½x3¾	45-2400	37-2000	144.0	6.75	118-1600 (BE)	W	In	I	SII	1.31	1.13	1.18	1.00	.312	.281	.372	.372
65	(12) XAH	T,Tr,Ind	4-3½x4½	47-2000	44-2000	186.0	5.50	131-1400 (BE)	N	In	L	SII	1.56	1.56	1.37	1.37	.302	.275	.375	.375
66	(11) 185GL	T,Tr,Ind	6-3½x3¾	67-2400	58-2200	216.0	6.75	176-1400 (BE)	W	In	I	SII	1.31	1.12	1.18	1.00	.312	.281	.372	.373
67	(11) 190GL	T,Tr,Ind	6-3⅝x4	77-2200	66-2000	265.0	6.50	223-1200 (BE)	W	In	I	SII	1.40	1.28	1.25	1.12	.359	.375	.376	.376
68	(11) 195GL	T,Tr,Ind	6-4x4	85-2400	77-2200	302.0	6.20	240-1200 (BE)	D	In	I	SII	1.84	1.68	1.69	1.44	.344	.344	.373	.372
69	(11) 195GKA	T,Tr	6-4½x4	122-3000	88-2200	320.0	6.20	243-1600 (BE)	N	In	I	SII	1.84	1.59	1.69	1.44	.406	.411	.372	.372
70	(11) MZA	T,B,Ind,Tr	6-4¼x4¾	128-2800	82-2000	404.0	5.60	289-1000 (BE)	N	In	L	SII	1.93	1.68	1.68	2.80	.375	.375	.375	.376
71	**(11) 135GKB	T,B,Tr	6-4¼x5	147-2800	121-2200	426.0	6.25	337-1200 (BE)	D	In	I	SII	2.06	1.81	1.87	1.62	.455	.423	.438	.433
72	**(11) 135GZB	T,B,Tr	6-4¼x5	153-2800	130-2200	451.0	6.30	354-1200 (BE)	N	In	...	SII	2.06	1.81	1.87	1.62	.482	.405	.434	.434
73	(11) 140-GK	T,B,Ind,Tr	6-4½x5½	160-2250	117-1800	525.0	6.40	401-1000 (BE)	W	In	L	SII	2.12	1.86	1.87	1.37	.531	.434	.434	.434
74	**(11) 140GKB	T,B,Tr	6-4½x5½	177-2600	135-2000	525.0	6.40	425-1000 (BE)	W	In	I	SII	2.12	1.56	1.87	1.37	.540	.540	.437	.437
75	(11) 140GZ	T,B,Tr	6-4½x5½	168-2250	135-1800	554.0	6.40	448-1100 (BE)	W	In	...	SII	2.12	1.86	1.87	1.37	.524	.524	.437	.437
76	**(11) 140GZB	T,B,Tr	6-4½x5½	186-2600	143-2000	554.0	6.40	448-1100 (BE)	W	In	I	SII	2.12	1.56	1.87	1.37	.524	.524	.437	.437
77	(11) 145-GK	T,B,Ind,Tr	6-5¼x6	216-2000	167-1800	779.0	6.20	585-1000 (BE)	W	In	I	SII	2.37	1.84	2.12	1.62	.594	.531	.500	.500
78	**(11) 145GKB	T,B,Tr	6-5¼x6	246-2400	176-2000	779.0	6.20	585-1000 (BE)	W	In	I	SII	2.56	2.03	2.31	1.81	.600	.600	.500	.500
79	**(11) 148GZB	T,B,Tr	6-5⅝x6	250-2400	185-2000	817.0	6.00	630-1100 (BE)	W	In	I	SII	2.37	1.84	2.12	1.62	.594	.531	.497	.498
80	(12) WAK	T,Tr,Ind	6-6¼x8½	222-1600	206-1500	1197.0	5.20	892- 900 (BE)	W	In	I	SII	2.63	2.22	2.37	2.00	.656	.656	.500	.500
81	**(11) WAKB	T,Tr,Ind	6-6¼x8½	280-1800	255-1800	1197.0	5.20	1000-1000 (BE)	W	In	I	SII	2.65	2.22	2.37	2.00	.656	.656	.500	.500

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

GASOLINE ENGINES—*continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT								CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats														MAIN BEARINGS												
Angle (Deg.)	Inserts Used	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engines Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
45	E	CA	HG	Al	46	1.00x3.85	4	1045	8	40	1045	N	2.00x1.50	7	2.62x2.00	2.62x1.25	abcdg	Zen	1¼	1016	22½	28¼	53¼	.....	1
30	N	.....	HG	Al	29.5	.750x2.81	4	3140	8½	21.0	4140	.....	1.75x1.12	3	2.00x1.56	2.00x1.62	acdg	Zen	1	425	22½	21	32⅝	.....	2
30	N	.....	HG	Al	26.0	.875x2.92	3	1035	7	26.0	1046‡	.....	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Zen	1½	625	22½	24	42½	.....	3
30	N	.....	HG	Al	44.5	1.12x3.44	3	3140	8	39.2	1046‡	.....	2.00x1.25	7	2.50x1.31	2.50x2.12	acg	Zen	1¾	825	22½	25	48½	.....	4
30	E	St	HG	Al	40	1.12x3.59	4	1340	7¼	56	1045	.....	2.18x1.62	7	2.51x1.62	2.51x1.62	acdfg	Zen	1¼	872	25½	34⅞	45⅞	3	5
30	E	St	HG	Al	34.7	1.12x3.59	4	1340	7¼	56	1045	.....	2.18x1.62	7	2.51x1.62	2.51x1.62	acdfg	Zen	1¼	830	25½	34⅞	45⅞	3	6
30	E	Ste	HG	Al	31.9	1.12x3.11	4	1340	7¼	56	1045	.....	2.18x1.62	7	2.51x1.62	2.51x1.62	acdfg	Car	1½	820	25½	34⅞	45⅞	3	7
30	Be	å	HG	Al	41.4	1.13x3.59	4	1340	7¼	56	1045	.....	2.18x1.62	7	2.51x1.62	2.51x1.62	acdfg	Ene	1¾	914	25½	34⅞	45⅞	3	8
30	E	St	HG	Als	42	1.13x3.59	4	1340	7¼	52	1045	.....	2.31x1.30	7	2.75x1.30	2.75x1.30	acdfg	Zen	1¾	963*u	24⅞	33⅞	45⅞	3	9
30	Be	Ste	HG	Al	29.9	1.13x3.11	4	1340	7¼	50.2	1045	.....	2.18x1.38	7	2.50x1.34	2.50x1.34	acdfg	Ene	1½	872*u	25½	34⅞	45⅞	3	10
30	Be	å	HG	Al	41.4	1.13x3.54	4	1340	7¼	52	1045	.....	2.31x1.30	7	2.75x1.30	2.75x1.30	acdfg	Alg	1¾	995	24⅞	34⅞	45⅞	3	11
30	Be	å	HG	Al	39.2	1.06x3.37	4	1340	7⅝	45	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdfg	Car	.....	1211	27½	36¾	39½	2	12
30	Be	å	HG	Al	39.2	1.06x3.59	4	1340	7⅝	45	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdfg	Car	.....	1211	27½	36¾	39½	2	13
30	Be	å	HG	Al	39.2	1.06x3.59	4	1340	7⅝	45.0	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdfg	Alg	.....	1262*	27½	36¾	39½	2	14
30	E	St	HG	Al	31.9	1.13x3.11	4	1340	7¼	50.2	1045	.....	2.17x1.38	7	2.50x1.34	2.50x1.34	acdefg	Car	1½	750	21	33	47	3	15
30	E	St	HG	Al	34.7	1.13x3.11	4	1340	7¼	50.2	1045	.....	2.17x1.38	7	2.50x1.34	2.50x1.34	acdefg	Zen	1¾	750	21	33	47	3	16
30	E	St	HG	Al	37.6	1.13x3.59	4	1340	7¼	50.2	1045	.....	2.17x1.38	7	2.50x1.34	2.50x1.34	acdefg	Zen	1¾	780	21	33	47	3	17
30	E	St	HG	Al	42.0	1.13x3.59	4	1340	7¼	52.0	1045	.....	2.31x1.30	7	2.75x1.30	2.75x1.30	acdfg	Zen	1¾	875	21	33	47	3	18
30	E	St	HG	Al	39.2	1.06x3.37	4	1340	7⅝	45.0	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdefg	Car	.....	1100	28	37⅞	34½	2	19
30	E	St	HG	Al	39.2	1.06x3.59	4	1340	7⅝	45.0	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdefg	Car	.....	1100	28	37⅞	39½	2	20
30	N	.....	HG	Al	29.5	.750x2.81	3	3140	8½	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	acgr	Zen	1¼	410*	22⅞	21¾	32¾	6	21
30	N	.....	HG	Al	26	.875x2.90	4	CS	7	26	CS	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acgr	Zen	1½	675*	22¾	23¼	41½	4	22
30	N	.....	HG	Al	26	.875x2.92	3	1035	7	26	AS	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Zen	1½	675	22¾	23¼	41½	4	23
45	N	.....	HG	Al	29.5	1.00x3.51	4	1040	8	37	1045	N	2.00x1.50	7	2.50x1.31	2.50x2.12	acgr	Zen	1¾	880*	22¾	32¾	48½	4	24
30	N	.....	HG	Al	49	1.12x3.44	4	AS	8	39.2	CS	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	acgr	Zen	1¾	890*	22¾	32¾	48½	4	25
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅞	70	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acdr	Hol	2	1050*	27¾	32⅞	56¾	.....	26
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅞	70	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acdr	Str	2	1150*	24⅝	29⅞	56¾	.....	27
45	N	.....	HG	Al	50	1.37x3.84	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	acdr	Zen	2	1525*	29¼	33⅞	68	.....	28
45	N	.....	HG	Al	56	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	acdr	Zen	2	1525*	29¼	33⅞	68	.....	29
45	N	.....	HG	Al	56	1.37x4.00	4	AS	11¼	84	CS	Y	2.87x2.25	4	3.00x3.00	3.00x3.62	acdr	Zen(2)	2	1525*	29¼	33⅞	68	.....	30
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅞	164+	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acdr	Zen	1¾	1750*	35	33½	56½	.....	31
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅞	164+	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acd	Str(2)	2	1750*	33¼	30⅞	56½	.....	32
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅞	164+	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acd	Str(2)	2	1750*	33¼	30⅞	56½	.....	33
30	N	.....	HG	Al	29.5	.75x2.80	3	3140	6½	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	acdeg	Zen	1¼	410	22⅞	21¾	32¾	6	34
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(3)	2½	7500	45	64⅛	100⅞	00	35
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(3)	2½	7500	45	64⅛	100⅞	00	36
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(4)	2½	9900	44⅞	61¾	142⅝	.....	37
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(4)	2½	9000	45	64⅛	121⅜	00	38
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(4)	2½	9000	45	64⅛	121⅜	00	39
45	E	T-12	HG	Al	91	1.43x4.37	5	1035	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdeg	Zen(2)	1¾	2300	33	41½	59½	1	40
45	E	T-12	HG	Al	91	1.43x4.37	5	1035	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdeg	Zen(2)	1¾	1900	33	34½	73⅛	.....	41
45	N	.....	HG	Alt	9.7	.750x2.63	3	C1041	8½	19	C1045	Y	1.81x.875	4	3.06x1.03	3.06x1.50	acdg	Car	1¼	468	20½	27	29⅝	.....	42
45	N	.....	HG	Al	15.4	.875x2.87	3	C1041	7¼	33.1	C1046	.....	2.19x1.13	4	2.88x1.09	2.88x1.78	acdf	Car	1¼	625	21¾	29	33⅞	.....	43
45	N	.....	HG	Alt	16.7	.875x3.06	3	C1141	6½	23.7	C1048	Y	2.00x.813	5	2.50x1.00	2.50x1.52	acdfg	Str	1½	710*	25¾	28¼	29⅝	.....	44
45	N	.....	HG	Al	16.7	.875x3.06	3	C1141	6½	23.7	C1046	.....	2.00x.813	5	2.50x1.00	2.50x1.52	acdf	Str	1½	725	25¾	28¼	29⅝	.....	45
45	N	.....	HG	Al	15	.750x2.56	4	CS	7¼	26	CS	Y	1.75x1.37	2	1.75x1.87	1.75x2.00	acdg	Zen	⅞	300	20⅛	22⅝	28½	.....	46
45	N	.....	HG	Al	.....	.686x2.16	3	CS	6	.....	CS	Y	1.56x1.23	2	1.99x1.62	1.99x1.25	acdgr	Zen	⅞	260	17¼	19	26⅝	.....	47
45	N	.....	HG	Al	.....	.686x2.16	3	CS	6	.....	CS	Y	1.56x1.23	2	1.99x1.62	1.99x1.25	acdgr	Zen	⅞	348	17¼	19	35½	.....	48
45	N	.....	HG	Cl	.....	1.00x3.75	3	Al	8½	.....	CS	Y	2.00x2.00	2	2.00x2.00	2.00x2.00	Splash	Zen	⅞	200	15⅞	24⅝	17⅛	.....	49
45	N	.....	HG	Cl	19	.625x2.44	3	CS	7½	22	CS	N	1.50x1.75	2	1.50x2.75	1.50x2.75	acdg	Zen	1	347	17⅞	21½	34½	.....	50
45	N	.....	HG	Al	15	.750x2.56	4	Al	7¼	18	CS	Y	1.75x1.37	3	1.75x2.37	1.75x2.37	acdgr	Zen	1¼	439	20½	22⅝	34½	.....	51
30	N	.....	HG	Al	29.5	.75x2.81	3	3140	6½	21.0	4140	.....	1.75x1.12	3	2.00x1.56	2.00x1.56	acdg	Zen	1¼		24½	21⅝	31½	.....	52
30	N	.....	HG	Al	29.5	.750x2.81	3	3140	6½	21.0	4140	.....	1.75x1.12	3	2.00x1.56	2.00x1.56	acdg	Zen	1¼	496	24½	21⅝	40⅝	.....	53
45	N	.....	HG	Al	15	.750x2.56	4	Al	7¼	18	CS	Y	1.75x1.37	4	1.75x2.50	1.75x2.00	acdg	Zen	1¼	529	24	20¾	43½	.....	54
45	N	.....	HG	Al	20	.875x2.75	4	Al	8½	30	CS	N	2.00x1.75	3	2.00x2.50	2.00x2.50	acd	Zen	1¼	534	18½	25¼	39½	.....	55
45	N	.....	HG	Al	28	.875x3.00	4	Al	8½	28	CS	N	2.00x1.75	7	2.00x3.00	2.00x1.75	acdg	Str	1¼	765	20½	26¾	49⅛	.....	56
45	N	.....	HG	Al	28	.875x3.00	4	Al	8½	28	CS	N	2.00x1.75	7	2.00x3.00	2.00x1.75	acdg	Str	1¼	810	22⅛	26¾	49⅛	.....	57
30	N	.....	HG	Alt	26	.875x2.92	3	1035	7	26	1046‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acdgr	Zen	1½	684*	24½	23⅝	40⅝	.....	58
30	N	.....	HG	Alt	26	.875x2.92	3	1035	7	26	1046‡	Y	2.00x1.25	7	2.50x1.31	2.50x1.93	acgr	Zen	1½	696*	24½	23⅝	40⅝	.....	59
30	N	.....	HG	Alt	.....	1.12x3.44	4	1035	8	39.2	1046‡	Y	2.00x1.50	7	2.50x1.12	2.50x1.31	acr	Zen	1¾	840	25	25⅛	45⅝	.....	60
30	N	.....	HG	Alt	.....	1.12x3.44	4	1035	8	39.2	1046‡	Y	2.00x1.50	7	2.50x2.12	2.50x1.31	acr	Zen	.....	840	25	25⅛	45⅝	.....	61
45	N	.....	HG	Al	.....	.625x2.12	4	1045	6	14	1045	N	1.56x1.25	2g	ND1207	ND1207	ad	Op	⅝	195	14⅛	20¼	21⅛	6	62
45	E	CA	HG	Cl	.....	.875x2.75	4	1045	7¼	29	1045	N	1.75x1.06	3	2.12x1.18	2.12x1.43	abcdg	Op	¾	290	19	28⅝	27⅝	5	63
44½	N	.....	HG	Cl	.....	1.25x2.75	4	1045	9¼	31½	1045	N	2.00x1.38	3	2.25x1.63	2.25x1.63	acdg	Op	1	450	19	27⅝	30⅞	4	64
45	E	CA	HG	Cl	.....	1.12x3.03	4	1045	9¼	46	1045	N	2.00x1.50	3	2.00x1.88	2.00x2.50	abcdg	Op	1	385	19	28¾	32⅛	5	65
45	N	.....	HG	Cl	.....	1.25x1.75	4	1045	9¼	.....	1045	N	2.00x1.38	4	2.25x1.63	2.25x1.63	abcdfg	Op	1	740	22	29	40⅝	3	66
44½	N	.....	HG	Cl	.....	1.25x3.00	4	1045	9¼	.....	1045	N	2.25x1.37	4	2.63x1.88	2.63x1.75	abcdfg	Op	1	690	22	29	42⅝	3	67
44½	E	CA	HG	Cl	.....	1.25x3.43	4	1045	9¼	.....	1045	Y	2.62x1.38	4	2.63x1.88	2.63x1.75	abcdfg	Op	1¼	775	26	30¼	43⅞	3	68
44½	E	CA	HG	Cl	.....	1.25x3.44	4	1045	9¼	47¼	1045	Y	2.62x1.38	4	2.63x1.88	2.63x1.75	abcdfg	Op	1¼	775	26	30¼	43⅞	3	69
45	E	CA	HG	Al	.....	1.00x4.00	4	1045	9¼	46	1045	N	2.25x1.50	7	2.63x1.63	2.63x2.75	abcdg	Op	1¼	920	20½	34	43⅝	3	70
44½	E	St	HG	Al	.....	1.50x3.83	4	1045	9½	.....	1045	Y	3.00x1.62	7	3.25x1.90	3.25x2.50	abcdfg	Op	1¾	1325	26	37½	40⅛	3	71
45	E	St	HG	Al	.....	1.50x3.82	4	1045	9½	.....	1045	Y	3.00x1.62	7	3.25x1.90	3.25x2.50	abcdfg	Op	1¾	1495	26	37½	48⅛	3	72
(h)	E	CA	HG	Al	.....	1.37x3.87	4	1045	10¼	85	1045	N	2.62x2.00	7	3.25x1.59	3.25x3.00	abcdfg	Op	1¾	1390	23⅝	41¾	50⅝	3	73
(h)	E	St	HG	Al	.....	1.37x3.87	4	1045	10¼	85	C1046	Y	2.62x2.00	7	3.25x1.59	3.25x3.00	abcdfg	Op	1¾	1495	23⅝	41¾	50⅝	3	74
(h)	E	CA	HG	Al	.....	1.37x3.87	4	1045	10¼	85	1045	N	2.62x2.00	7	3.25x1.59	3.25x3.00	abcdfg	Op	1¾	1390	23⅝	41¾	50⅝	3	75
(h)	E	St	HG	Al	.....	1.62x4.50	4	1045	10¼	85	C1046	Y	2.62x2.00	7	3.25x1.59	3.25x3.00	abcdfg	Op	1¾	1390	23⅝	41¾	50⅝	3	76
(h)	E	CA	HG	Al	.....	1.62x4.87	4	1045	11¼	133	1045	N	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdfg	Op	2	1810	25¾	48⅝	57½	2	77
(h)	E	St	HG	Al	.....	1.62x4.87	4	1045	11¼	133	C1046	Y	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdfg	Op	2	1810	25¾	48⅝	57½	2	78
(h)	E	St	HG	Al	.....	1.62x4.50	4	1045	11¼	133	1045	Y	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdfg	Op	2	1810	25¾	48⅝	57½	2	79
(h)	E	CA	HG	Cl	.....	1.87x5.50	4	1045	13¼	195	1045	N	3.37x2.37	7	4.00x2.19	4.00x3.25	abcdfg	Op	2	3050	30⅝	50⅞	65⅝	0	80
(h)	E	St	HG	Al	.....	1.87x5.50	4	1045	13¼	195	1045	Y	3.37x2.37	7	4.00x2.19	4.00x3.25	abcdfg	Op	2	3050	30⅝	50⅞	65⅝	0	81

For abbreviations, see pages 220 and 221

For Directory of the Engine Manufacturers listed above, see Table of Contents

• GASOLINE ENGINES •

1957 AUTOMOTIVE

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
	Waukesha—Cont'd																			
1	▼(12) NKRB	Ind	6-7x8¼	316-1150	276-1050	1905.0	6.50	1520- 800 (BE)	W	In	I	SII	3.22	2.78	2.87	2.50	.709	.709	.620	.619
2	▲(12) LRORB	Ind	6-6½x8½	432-1100	405-1000	2894.0	6.60	2260- 800 (BE)	W	Se	I	SII	3.50	3.00	3.25	2.75	.750	.640	.562	.562
3	▲(12) LRZB	Ind	6-9½x8½	515-1200	482-1100	3520.0	6.10	2775- 600 (BE)	W	Se	I	SII	4.19	3.41	3.62	3.12	.770	.696	.661	.661
4	VLROB	Ind	12-6½x8½	900-1200	867-1200	5788.0	6.75	4530- 800 (BE)	W	In	I	SII	.....	.....	.....	.....	.....	.....	.....	.....
5	Willys L4-134	C,Ind	4-3⅛x4⅜	60-4000	.....	134.2	6.48	105-2000 (BE)	N	In	L	CHS	1.53	1.47	1.34	1.28	.351	.351	.373	.372
6	F4-134	C,T,Ind	4-3⅛x4⅜	72-4000	.....	134.2	6.90	114-2000 (BE)	N	In	F	(o)	2.00	1.47	1.84	1.28	.260	.351	.374	.372
7	L6-226	C,T	6-3⅛x4⅜	115-3650	.....	226.2	6.86	190-1800 (BE)	N	In	L	SII	1.52	1.33	1.36	1.19	.352	.332	.341	.339
8	Wisconsin VE-4	Tr,Ind	4-3x3½	21.5-2400	21.5-2400	91.9	5.44	50-1700 (EA)	N	Se	L	Aus	1.31	1.31	1.12	1.12	.275	.275	.309	.309
9	VF-4	Tr,Ind	4-3¼x3¼	25-2400	25-2400	107.7	4.97	57-1700 (EA)	N	Se	L	Aus	1.31	1.31	1.12	1.12	.275	.275	.309	.309
10	VH-4	Ind	4-3¼x3¼	30-2800	30-2800	107.7	5.44	66-1700 (BE)	N	Se	L	CNS	1.32	1.32	1.12	1.12	.275	.275	.309	.309
11	VG4D	Ind	4-3½x4	36-2200	36-2200	154.0	5.06	94-1500 (EA)	N	Se	L	St	1.56	1.56	1.37	1.37	.275	.275	.309	.309
12	VR4	Ind	4-4½x4½	57-2200	57-2200	286.0	5.10	167-1300 (BE)	N	Se	L	St	2.00	2.00	1.81	1.81	.340	.340	.373	.373
13	Witte 98	Ind	1-8x8	12-1200	11.8-1200	98.2	5.60	52-1200 (BE)	W	In	I	Foc	2.13	2.13	1.88	1.88	.322	.322	.375	.375

ABBREVIATIONS

▫—With hard seat inserts.
*—Stellite faced.
•—Weight complete with ignition and carburetor.
**—Intake, Moly Iron; exhaust, Stellite Steel.
•—With rotators.
■—Also available in reduction gear models.
▼—Also available in R.H. rotation.
▼▼—High output.
†—Tocco hardened.
‡‡—Forked 23.7 cu.—Blade 22.4 cu.
✦—Weight per pair.
§—4 Rings used on Trucks and 5 on Coaches.
▲▲—5.20 for gasoline—6.00 for natural gas or butane.
‖—Dual.
#—Cast Iron 315, Aluminum 250 lbs.
‡—Super-Charged engine.
°°—Weight of piston only.
•—Liquid petroleum gas engine.
▲—Intake, Steel; exhaust, Stellite Steel.
‡‡—Four barrel carburetor optional.
‡—Natural gas engine.
(2)—Two used.
(3)—Three used.
(4)—Four used.
(7)—Roller bearings.
(11)—Automotive power ratings.
(12)—Industrial power ratings.
(14)—Unilay Type 307 head, 3140 steel stem.
(a)—Main bearings.
(b)—Wristpins.
(c)—Connecting rods.
(d)—Camshaft.
(e)—Accessory drive.
(f)—Valve lifters or rocker arms and shafts.
(g)—Timing gears or chain.
(h)—Intake 30, Exhaust 45.
(i)—Cylinder walls.
(j)—Timken Cone 14138A, Cup 14276.
(k)—Intake 30, Exhaust 44.
(l)—Intake, 45; exhaust, 30.
(m)—A model in this series is also available for use with liquid petroleum gases. The engine will have a higher compression ratio, brake horsepower and torque.
(o)—Uniloy 21-12 (Type 307) with valve rotators on 473.
(p)—Hydraulic valve lifters and cylinder walls.
(q)—Tocco hardened journals on VT-346 and VTX-346 models.
(r)—Reverse gear.
(s)—Fan drive gear.
(t)—Tappets and valve mechanism.
(u)—Complete with SAE housing.
(v)—Intake, 45; exhaust, 43.
(w)—Also available factory engineered for LPG fuel.
(x)—Sodium cooled.
(y)—Stellite faced, sodium cooled.
(z)—Intake 30, Exhaust 29.
A—Alloy.
AC—Aluminum or cast iron.
AI—Alloy Iron.
Al—Aluminum alloy.
Ala—Aluminum alloy, anodized.
Alb—Aluminum bronze.
Alg—Algas.
Als—Aluminum alloy with steel strut.
Alst—Aluminum alloy with steel strut, tin plated.
Alt—Aluminum alloy (Tin costed).
AS—Alloy steel.
Ata—Aluminum alloy, tin plated and anodized.
Atn—Aluminum alloy, tinplated and knurled.
Aus—Austenitic steel.
B—Buses.
BB—Ball & Ball.
BE—Bare engine.

For Directory of the Engine Manufacturers listed above, see Table of Contents

1955-1954 Gasoline Engine Shipments by Piston Displacement

(Except Automotive and Aircraft)

In Units and Their Value

Piston Displacement (Cubic Inches)	Total Engines Produced	Shipments		Used in Product of Same Co.
		No. of Engines	Value at Plant	
Under 6	1,465,759	1,021,392	$ 22,563,000	444,367
6.0-10.9	2,625,157	2,462,422	61,494,000	162,735
11.0-15.0	83,230	72,154	4,345,000	11,076
16.0-20.0	67,974	53,479	3,601,000	14,495
21.0-40.0	99,986	84,910	7,100,000	15,076
41.0-75.0	72,527	56,837	10,418,000	15,690
76.0-100	30,801	15,466	3,470,000	15,336
101-125	75,731	33,961	7,635,000	41,770
126-200	203,471	94,895	23,793,000	108,576
201-225	21,976	19,048	6,937,000	2,928
226-250	92,035	57,316	22,540,000	34,719
251-300	39,422	12,851	5,176,000	26,571
301-500	46,392	26,026	25,608,000	20,366
501-600	2,563	2,185	2,805,000	378
601-700	417	417	706,000	.....
701-800	848	848	1,445,000	.....
801-900	683	680	1,620,000	3
901 and over	1,289	1,284	4,874,000	25
Total	4,932,259	4,017,848	$216,130,000	914,411

Piston Displacement (Cubic Inches)	Total Engines Produced	Shipments		Used in Product of Same Co.
		No. of Engines	Value at Plant	
Under 6	1,441,259	1,059,787	$ 24,921,000	381,472
6.0-10.9	1,560,956	1,490,756	38,781,000	70,200
11.0-15.0	62,393	53,881	3,435,000	8,512
16.0-20.0	144,834	49,285	3,307,000	17,983
21.0-30.0		70,823	6,401,000	
31.0-40.0		6,753	1,948,000	
41.0-50.0	9,491	9,491	2,259,000	.....
51.0-100	82,985	58,537	14,288,000	24,448
101-125	67,312	33,192	7,361,000	34,120
126-175	115,039	60,589	15,374,000	54,450
176-250	110,252	56,948	22,849,000	53,304
251-350	53,159	33,744	20,246,000	19,415
351-500	14,352	5,366	7,761,000	8,986
501-600	7,473	1,659	1,985,000	3,030
601-800		1,446	3,127,000	
801-900		327	866,000	
901 and over		1,011	5,437,000	
Total	3,669,505	2,933,575	$179,323,000	675,930

GASOLINE ENGINES—*concluded*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT								CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats														MAIN BEARINGS												
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engines Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. No.)	Line Number
(h)	E	CA	HG	CI	.....	2.50x6.63	4	1045	15⅝	.....	1045	Y	4.37x2.75	7	5.25x3.44	5.25x5.56	abcdfg	Op	2½	5 900	42	60⅛	82½	00	1
30	E	CA	HG	CI	.....	2.25x7.75	5	1045	18⅝	474	1045	Y	4.00x3.75	7	4.25x4.81	4.25x5.50	abcdfg	Op	2½	9 940	48½	65	95½	00	2
(h)	E	CA	HG	CI	.....	3.00x8.25	5	1045	21¾	.....	1045	Y	5.00x3.75	7	5.50x4.75	5.50x5.50	abcdfg	Op	4	11 250	48½	72	98⅜	00	3
.....	Bo	St	HG	Al	.....	3.00x7.00	5	4145	18	.....	1046	....	5.75x3.06	7	6.25x4.75	6.25x4.75	abcdefg	.....	4	15 000	67	75½	130	00	4
45	N	.....	HG	Alt	19	.812x2.78	3	1141	9⅞	32.0	1040	Y	1.94x1.31	3	2.33x1.64	2.33x1.66	acdg	Car	1¼	344	19	26⅜	26¼	5	5
45	N	.....	HG	Alt	19	.812x2.78	3	1141	9⅞	32.0	1040	Y	1.94x1.31	3	2.33x1.64	2.33x1.66	acdfg	Car	1¼	390	19½	30¼	26	5	6
(h)	N	.....	Ch	Alt	29.9	.859x2.78	4	1035	7	29.6	1045	....	2.06x1.53	4	2.38x1.06	2.38x1.32	acdg	Car	1⅛	558^A	25⅝	33	40½	.....	7
45	Bo	MI	HG	Al	14.6	.750x2.56	4	1035	8⅝	22	1045	N	1.75x1.12	2	Timken	Timken	PJ	Zen	⅞	295°	21½	28⅞	25⅝	.....	8
45	Bo	MI	HG	Al	16.1	.750x2.56	4	1035	8⅝	22	1045	N	1.75x1.12	2	Timken	Timken	PJ	Zen	⅞	295°	21½	28⅞	25⅝	.....	9
45	Bo	MI	HG	Al	16.0	.750x2.55	4	1035	8⅝	20.5	1045	....	1.88x1.13	2	Timken	Timken	PJ	MaS	⅞	310°	21½	27½	25⅝	.....	10
45	Bo	**	HG	Al	22.5	.937x2.75	4	1035	8⅝	30.7	1045	Y	2.13x1.31	2	Timken	Timken	PJ	MaS	1	410°	24	29	28½	.....	11
45	Bo	**	HG	Al	36.0	1.25x3.40	4	1035	9⅞	47.6	1045	....	2.75x1.38	2	Timken	Timken	PJ	Zen	1¼	775°	28	37⅛	31⅝	.....	12
45	Bo	St	Ch	Al	94.1	1.50x4.38	4	1035	10	102.5	1046	....	2.25x2.38	2	TRB	TRB	Splash	Til	1	655	31½	35⅛	33 1/16	6	13

Ben—Bendix.
Be—Used in both intake and exhaust seats.
C—Cars.
CA—Cast alloy.
CAI—Cast alloy iron.
Car—Carter Carburetor Corp.
Cen—Century.
Ch—Chain.
CHS—Chrome nickel silicon steel.
CI—Cast iron.
CIA—Cast iron, anodized.
CMS—Carbon manganese steel.
CMT—Chromium tungsten steel.
CNS—Chrome nickel steel.
CS—Carbon steel.
C-Z—Carter or Zenith.
D—Dry liners.
DC—Durachrome castings.
DFS—Drop forged steel.
Duc—Durachrome.
Dur—Duraluminum
E—Used on exhaust valve seats.
EA—Engine with standard accessories.
Eat—Eatonite.
EFS—Electric furnace steel.
Ens—Ensign.
F—F-head.
Fec—Ferchrome.
G—Gear.
H—Horizontal motor.
HAS—High alloy steel.
HC—Helical gear and chain.
HFA—Hard facing alloy.
HG—Helical gear.
HI—Hard iron.
Hol—Holley Carburetor Co.
I—In head (Valves).
In—Integral.
Ind—Industrial.
Jad—Jadson.
L—Valves at side (L-Head).
M—Marine.
MA—Manganese alloy.
MaS—Marvel-Schebler Carburetor Div.
MCS—Molybdenum chrome steel.
MI—Moly Iron.
MS—Manganese steel.
M-Z—Marvel-Schebler or Zenith.
N—No or none.
NI—Nodular iron.
Nif—Nifferrite.
Nir—Ni-Resist.
NS—Nickel steel.
Op—Optional.
PJ—Pump jet.
RB—Roller bearing.
R-P—Rochester Products.
SA—Special alloy.
SAC—Super alloy casting.
Se—Separate.
SF—Steel forging.
SG—Spur gear.
SH—Spur and helical gear.
Sil—Silichrome steel.
Spec—Special.
SS—Semi-steel.
St—Stellite steel.
Ste—Steel.
Str—Stromberg-Elmira Div.
T-12—Thompson Products No. 12.
T—Trucks.
TA—Tungsten alloy.
TCA—Tungsten cobalt alloy.
Til—Tillotson Mfg. Co.
TP—Thompson Products.
Tr—Tractors.
TRB—Tapered roller bearings.
W—Wet liners.
WM—Wassau Cast Moly No. 1.
Y—Yes.
Zen—Zenith Carburetor Div.

For Directory of the Engine Manufacturers listed above, see Table of Contents

1955-1954 Diesel and Semi-Diesel Engine Shipments by Piston Displacement

(Except Automotive and Aircraft)

In Units and Their Value

Piston Displacement (Cubic Inches)	Total Engines Produced	1955 Shipments No. of Engines	1955 Shipments Value at Plant	Used in Product of Same Co.
Under 101	27,226	21,930	$ 40,571,000	5,296
101-150	8,013	4,796	9,378,000	1,440
151-200		1,775	1,655,000	
201-250	9,122	4,344	3,222,000	4,778
251-300	23,393	8,977	7,671,000	14,416
301-400	26,349	4,049	6,236,000	24,300
401-500	6,703	2,444	4,696,000	4,259
501-600	12,961	3,581	14,288,000	9,380
601-800	6,007	4,693	17,085,000	3,314
801-1000	6,968	1,219	6,959,000	5,749
1001-1500	6,850	1,827	12,362,000	5,023
1501-2000	596	555	15,792,000	43
2001 and over	1,541	1,066	51,696,000	455
Total	139,731	61,278	$191,612,000	78,453

Piston Displacement (Cubic Inches)	Total Engines Produced	1954 Shipments No. of Engines	1954 Shipments Value at Plant	Used in Product of Same Co.
Under 51		321	$ 804,000	
51-100	17,861	331	1,127,000	4,945
101-250		12,264	12,034,000	
251-300	22,532	12,889	16,587,000	9,643
301-600	43,314	12,352	27,391,000	30,962
601-1,000	13,241	6,775	26,056,000	6,486
1,001-1,500	5,220	1,889	10,255,000	3,351
1,501-2,000		844	29,739,000	
2,001-3,000		323	5,494,000	
3,001-15,000	2,518	578	32,587,000	680
15,001-25,000		42	2,903,000	
25,001 and over		51	7,195,000	
Total	104,686	48,639	$172,271,000	56,047

DIESEL ENGINES \ 1957

TRUCKS • BUSES • TRACTORS

Line Number	ENGINE MAKE AND MODEL	Built Under License from	GENERAL																VALVES	
			Designed for	Type	Number of Cylinders Bore and Stroke (In.)	Cylinder Liners—Type	Cycle	Piston Displacement (Cu. In.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittent Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	Arrangement	Intake Port Diameter and Lift (In.)
1	Allis-Chalmers	2BD-77	Own	I	EC	2-4½x4½	W	4	77	17-2000	13-1800	11.5-1800	15.30	725	65.7	52.2	49-1400	600		VI	1½-.429
2		4DA-183	Own	Tr,I	EC	4-3½x4½	W	4	153	37-2000	29-2000	26-2000	15.00	725	67.3	27.3	111-1250	710		VI	1.38-.329
3		4DA-482	Own	Tr,I	EC	4-4⅝x4½	N	4	182	50-2000	38-2000	34-2000	15.00	725	74.0		138-1500			VI	1½-.429
4		6DA-230	Own	Tr,I	EC	6-3½x4½	W	4	230	55-2000	45-2000	40-2000	15.00	725	68.9	21.0	166-1250	840		VI	1.38-.329
5		6DA-273	Own	T	EC	6-3⅝x4½	N	4	273	74-2100	58-2000	51-2000	14.20	825	74.0	16.3	204-1400	830		VI	1.53-.439
6		6DA-779	Own	T,Tr	EC	6-5½x6	W	4	779	187-2100	142-1800	122-1800	14.20	725	68.9		560-1400			VI	2.00-.540
7		6DA-844	Own	T,Tr,I	EC	6-5½x6½	W	4	844	215-2100	167-1800	147-1800	14.2	725	76.6	19.4	640-1500	2850		VI	2.00-.580
8		6DAS-844	Own	T,B,Tr,I	EC	6-5½x6½	W	4	844	280-2100	215-1800	180-1800	12.8	725	93.8		780-1500			VI	2.00-.540
9		6DA-1125	Own	T,R,I	EC	6-5½x6½	W	4	1125	285-2100	210-1800	198-1800	14.2	725	77.4		830-1300			VI	2.00-.540
10		6DAS-1125	Own	T,Tr,I	EC	6-5½x6½	W	4	1125	350-2100	255-1800	210-1800	12.8	725	82.1		980-1400			VI	2.00-.540
11		6DCB-1879	Own	R,I	EC	6-6⅝x8⅝	W	4	1879	262-1300	232-1200	208-1200	13.00	725	73.1	33.4	1400-800	6950		VI	2.50-.687
12		6DCS-1879	Own	I	EC	6-6⅝x8⅝	W	4	1879	340-1300	290-1200	265-1200		725	93.1		1580-700			VI	2.50-.687
13		6DC-2505	Own	I	EC	6-6⅝x8⅝	W	4	2505	388-1300	312-1200	265-1200	13.00	825	69.8	37.0	1900-800	9800		VI	2.50-.687
14		6DCS-2505	Own	I	EC	6-6⅝x8⅝	W	4	2505	516-1300	400-1200	350-1200	13.00	875	92.2	30.0	2390-800	10500		VI	2.50-.687
15		6DAMR-273	Own	M	EC	6-3⅝x4½	N	4	273		85-2600	57-2000	14.20	825	82.7		204-1400			VI	1.53-.439
16		6DAMR-779	Own	M	EC	6-5½x6	W	4	779		168-2000	149-1800	14.20	725	83.6		560-1400			VI	2.00-.540
17		6DAMR-844	Own	M	EC	6-5½x6½	W	4	844		215-2000	165-1800	14.20	725	86		640-1500			VI	2.00-.580
18		6DASMR-844	Own	M	EC	6-5½x6½	W	4	844		245-1950	200-1800	12.80	725	104		780-1500			VI	2.00-.540
19		6DAMR-1125	Own	M	EC	6-5½x6½	W	4	1125		243-1950	206-1800	14.20	725	80.6		830-1300			VI	2.00-.540
20		6DATMR-1125	Own	M	EC	6-5½x6½	W	4	1125		300-1900	255-1800	12.80		112					VI	2.00-.540
21		6DCBMR-1879	Own	M	EC	6-6⅝x8⅝	W	4	1879		262-1200	235-1200	13.00	725	82.5		1400-800			VI	2.50-.687
22		6DCMR-2505	Own	M	EC	6-6⅝x8⅝	W	4	2505		350-1200	308-1200	13.00	825	80.6	40.4	1900-800		12350	VI	2.50-.687
23		6DCSMR-2505	Own	M	EC	6-6⅝x8⅝	W	4	2505		445-1200	400-1200	13.00	875	105.4	32.5	2390-800		13000	VI	2.50-.687
24		6DA-979	Own	I	EC	6-5½x6½	W	4	970	240-2000	215-1900	178-1800	14.00	725	90.8	23.6	752-1200	4200		VI	2.25-.546
25	Atlas	45		I,M	DI	4-9x10½	W	4	2672			192-750	14.00	850	76	68.04		13000	15100	HI	3.25-.875
26		45		I,M	DI	5-9x10½	W	4	3340			242-750	14.00	850	76	58.04		14000	16100	HI	3.25-.875
27		45		I,M	DI	6-9x10½	W	4	4008			290-750	14.00	850	76	59.04		17100	20000	HI	3.25-.875
28		*45		I,M	DI	6-9x10½	W	4	4008			435-750	13.00	900	115	42.54		18500	20890	HI	3.25-.875
29		45		I,M	DI	8-9x10½	W	4	5344			385-750	14.00	850	76	58.14		21600	24500	HI	3.25-.875
30		*45		I,M	DI	8-9x10½	W	4	5344			580-750	13.00	900	115	39.34		22800	25600	HI	3.25-.875
31		35-S-4	Own	I,M	DI	4-6⅛x8¼	W	4	1099			300-1225	14.60		78	20.04		8000	10900	VI	2.44-....
32		35-S-6	Own	I,M,R	DI	6-6⅛x8¼	W	4	1643			300-1225	14.60		78	25.04		8500	10900	VI	2.44-....
33		35-SX-6	Own	I,M,R	DI	6-6⅛x8¼	W	4	1643			300-1225	13.15		120	30.04		9000	10900	VI	2.44-....
34	Caterpillar	D-311	Own	Tr,M,I	PC	4-4x5	W	4	252	57-2000	52-2000	40-1800	18.50		70	45.04	165-1400	1800	2410	VI	1½-.421
35		D-315	Own	Tr,M,I	PC	4-4½x5½	W	4	350	82-2000	71-2000	54-1800	18.0		68	41.04	238-1200	2200	2710	VI	2⅛-.434
36		D-318	Own	Tr,M,I	PC	6-4½x5½	W	4	525	119-2000	107-2000	81-1800	18.0		68	34.34	350-1200	2770	3385	VI	2⅛-.434
37		D-397-RB	Own	M,I,R	PC	12-5½x8	W	4	2493	520-1300	493-1300	450-1200	16.00		114	25.04	2400-800	11200	16050	VI	2½-.5885
38		D-397-NA	Own	M,I,R	PC	12-5½x8	W	4	2493	415-1300	388-1300	360-1200	16.00		95.0	32.44	1865-800	10700	14060	VI	2½-.5885
39		D-375-RB	Own	M,I,R	PC	8-5½x8	W	4	1662	350-1300	328-1300	302-1200	16.00		112	29.44	1630-830	8870	11450	VI	2½-.5885
40		D-375-NA	Own	M,I,R	PC	8-5½x8	W	4	1662	275-1300	254-1300	238-1200	16.00		87	38.44	1220-900	8150	11270	VI	2½-.5885
41		D-326-F	Own	Tr,M,I	PC	6-5½x6½	W	4	806	184-2000	176.5-2000	131.5-1800	17.25		72	27.04	604-1200	3550	4470	VI	2.13-.510
42		D-337-F	Own	Tr,M,I	PC	6-5½x6½	W	4	805	280-2000	265-2000	180.5-1800	17.25		99	20.54	815-1400	3700	4830	VI	2.13-.510
43		D-338	Own	Tr,I	PC	4-5½x8	W	4	831	126-1200	119-1200	93-1200	15.70		74	40.9	600-800	3900		VI	2.06-.468
44		D-342	Own	Tr,M,I	PC	8-5½x8	W	4	1246	190-1200	184.5-1200	146.5-1200	15.70		77.5	35.14	905-800	5140	6905	VI	2.06-.468
45		D-375-D(T)	Own	M,I	PC	8-5½x8	W		1662	353-1300	350-1200	307-1200	16.00		122	28.24	1860-830	8650	11285	VI	2.34-.589
46		D-397-D(T)	Own	M,I	PC	12-5½x8	W		2493	575-1300	548-1300	479-1200	16.00		113	23.54	2640-900	11250	16250	VI	2.34-.589
47	Continental	GD-157	Own	I,M	TC	4-3⅝x4½	W	4	157	39-2000			15.5				113-1200	605		VI	1.18-.375
48		HD-243	Own	I	TC	4-3⅝x5½	W	4	243	64.7-2000			15				176-1200	940		VI	1.37-.325
49		HD-260	Own	I	TC	4-3⅞x5½	W	4	260	59.3-2000			15				188-1100	940		VI	1.37-.325
50		TD-427	Own	I	TC	6-4¼x4½	N	4	427	106.5-2000			14.5				310-1300	1300		VI	1.71-.437
51		RD-572	Own	I,M	TC	6-4⅝x5½	D	4	572	154-2000			14.5				428-1300	1845		VI	1.87-.546
52		TD-6427	Own	T,B,Tr	TC	6-4¼x4½	N	4	427	116-2400			14.5				307-1300	1270		VI	1.71-.437
53		RD-6572	Own	T,B,Tr	TC	6-4⅝x5½	D	4	572	172-2400			14.5				423-1300	1785		VI	1.87-.546
54		SD-802	Own	I	TC	6-5½x5½	D	4	802	202-1800			14.7				620-1200			VI	2.19-.552
55		SD-6802	Own	T,B	TC	6-5½x5½	D	4	802	225-2200			14.7				620-1300			VI	2.19-.552
56		ED-201	Own	I	TC	4-3⅝x4½	W	4	201	45.5-2000			15				145-1100			VI	1.44-.350
57		JD-382	Own	I	TC	4-4⅛x6	W	4	382	72.5-1600			14.5				276-1000			VI	1.56-.406
58		VD-603	Own	I	TC	6-4⅝x4½	N		602	175-2800			15.80				468-1200			VI	1.94-.567
59		VD-6603	Own	T,B	TC	6-4⅝x4½	N	4	603	182-2800			15.80				470-1300	1696		VI	1.94-.567
60		ZD-129	Own	I	TC	4-3½x3½	W		129	34-2000			16.25				95-1200			VI	1.13-.352
61		HD-277	Own	I	TC	4-4x5½	W		277	63-2000			15.30				201-1100			VI	1.38-.325
62	Cummins	J-600	Own	T,B,Tr,M,I,R	DI	6-4½x5	W	4	401	95-1800	80-1800	71-1800	15.70		78	21.1	284-1600	1505	1830	VI	1.38-.406
63		JF-600	Own	T,B,Tr,M,I,R	DI	6-4½x5	W	4	401	105-2200	89-2200	76-2000	15.70		83	20.2	284-1600	1545	1880	VI	1.38-.406
64		JN-600	Own	T,B,Tr,M,I,R	DI	6-4½x5	W	4	401	125-2500	97-2200	87-2200	15.80		78	17.9	290-1800	1555	1900	VI	1.16-.406
65		JS-600	Own	T,B,Tr,M,I,R	DI	6-4½x5	W	4	401	150-2500	118-2200	105-2200	13.00		94	15.2	350-1725	1600	1970	VI	1.38-.406
66		JNS-600	Own	T,B,Tr,M,I,R	DI	6-4½x5	W	4	401	165-2500	132-2200	115-2200	13.00		103	14.0	395-1680	1610	2000	VI	1.16-.406
67		JT-600	Own	T,B,Tr,M,I,R	DI	6-4½x5	W	4	401	175-2500	137-2200	121-2200	15.80		106	13.4	405-1750	1615	1950	VI	1.16-.406
68		HR-400	Own	T,B,Tr,M,I,R	DI	4-5½x6	W	4	495	110-1800	94-1800	82-1800	15.50		74	21.5	363-1000	1765	1980	VI	1.75-.500
69		HRC-400	Own	T,B,Tr,M,R,I	DI	4-5½x6	W	4	495	110-1800	94-1800	82-1800	15.50		74	22.0	363-1000	1875	2030	VI	1.75-.500
70		NHC-400	Own	T,B,Tr,M,R,I	DI	4-5½x6	W	4	495	125-2000		90-1800	15.50		80	20.8	390-1150	1875	2150	VI	1.56-.420
71		NT-4	Own	T,B,Tr,M,I,R	DI	4-5½x6	W	4	495	165-2000	140-2000	117-1800	15.50		104	16.5	475-1400	1935	2085	VI	1.56-.420
72		H-600	Own	T,B,Tr,M,R,I	DI	6-4½x6	W	4	672	150-1800	126-1800	113-1800	16.60		74	20.6	485-1225	2330	2595	VI	1.75-.500
73		HR-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	165-1800	140-1800	124-1800	15.50		73	18.7	518-1300	2330	2595	VI	1.75-.500
74		HRF-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	180-2000	153-2000	128-1800	15.50		76	18.6	550-1330	2385		VI	1.75-.500
75		HS-600	Own	T,B,Tr,R,I	DI	6-4½x6	W	4	672	200-1800	170-1800	150-1800	14.00		98	16.8	640-1330	2535		VI	1.75-.500
76		HRS-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	225-1800	191-1800	169-1800	13.50		100	15.0	708-1300	2545	2845	VI	1.75-.500
77		NH-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	210-2100	178-2100	146-1800	15.50		81	16.6	580-1600	2420	2780	VI	1.56-.420
78		NT-6	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	250-2100	212-2100	172-1800	15.50		102	14.6	695-1500	2515	3020	VI	1.56-.420
79		NTO-6	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	262-2100	223-2100	174-1800	15.50		103	14.5	700-1500	2515		VI	1.56-.420
80		NHS-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	275-2100	234-2100	182-1800	13.50		109	14.9	720-1550	2720	2965	VI	1.56-.420

For abbreviations, see pages 228 and 229

For Directory of the Engine Manufacturers listed above, see Table of Contents

MARINE • RAILCAR • INDUSTRIAL

VALVES			PISTON				PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM					AIR CLEANER	FUEL FILTER	STARTING METHOD		OVERALL DIMENSIONS			CLUTCH HOUSING	LINE NUMBER
Exhaust Port Diameter and Lift (In.)		Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked In—	Materials (S. A. E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifice	Pressure—Nozzle Opening (Lb. per Sq. In.)			Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)	(S. A. E. Numbers)	
1.12- .429		AA	4.12	2.38	3	2	1.00-2.75	F	1035	7⅝	2.62	3	2.50	AB	AB	C	PI	2000	Ver	Com	AL	E-H	22⅞	19⅝	29½(11)	3,2	1
1.12- .334		AA	4.12	2.38	3	2	1.00-2.84	F	1035	7.38	2.62	4	2.50	AB	AB	C	PI	2000	Uni	BFC	AL	Ele	30⅞	20½	29⅞		2
1.22- .439		AA	4.46	2.69	3	2	1.00-3.10	F	1035	7⅝	2.62	3	2.50	AB	AB	C	PI	2000	Ver	Com	AL	Ele	30⅞	19⅝	26⅛(12)	3,2	3
1.12- .334		AA	4.12	2.38	3	2	1.00-2.84	F	1035	7.38	2.62	7	2.50	AB	AB	C	PI	2000	Uni	BFC	AL	Ele	38½	20½	29⅞(12)		4
1.22- .439		AA	4.13	2.75	3	2	1.00-2.75	F	1040	7.38	3.00	7	2.50	AB	AB	C	PI	2000	Ver	Cb	DR	Ele	39⅞	22⅝	25½(4)		5
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	PI	2000	Don	Com	L-D	Ele	58½	29⅞	48¼	1,0	6
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	PI	2000	Don	AB	L-D	E-G	58½	29⅞	48¼	1,0	7
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	PI	2000		AB	L-D	E-G	58½	32½	48¼	1,0	8
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	PI	2000		AB	L-D	E-G	73	30¼	48¼	1,0	9
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	PI	2000		AB	L-D	E-G	83½	36½	53⅝	1,0	10
2.16- .687		AA	9.31	19.19	3	2	2.75-5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	PI	1800	Uni	P-S	D-N	E-G	88½	38½	62⅞(12)	00,0	11
2.16- .687		AA	9.31	19.19	3	2	2.75-5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	PI	1800		Pur	LB	E-G	88½	48	63⅝	00,0	12
2.16- .687		AA	9.31	19.19	3	2	2.75-5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	PI	1800	Don	Pur	LN	AEG	108¾	47½	74½	00,00	13
2.16- .687		AA	9.31	19.19	3	2	2.75-5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	PI	1800	Don	Pur	LN	AEG	112¾	47½	74½	00,0	14
1.22- .474		AA	4.13	2.75	3	2	1.00-2.75	F	1040	7.38	3.00	7	2.50	AB	AB	C	PI	2000	Uni	Cb	DR	Ele	39⅞	22⅝	25½(4)		15
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	PI	2000	Uni	Com	L-D	Ele	58½	29⅞	48¼	1,0	16
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	PI	2000	Uni	AB	L-D	E-G	58½	29⅞	48¼	1,0	17
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	PI	2000		AB	L-D	E-G	58½	32½	48¼	1,0	18
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	PI	2000		AB	L-D	E-G	73	30¼	48¼	1,0	19
1.81- .540		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	PI	2000		AB	L-D	Ele	101¼	36½			20
2.16- .687		AA	9.31	19.19	3	2	2.75-5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	PI	1800	Uni	P-S	D-N	E-G	86½	38½	62⅞(12)	00,0	21
2.16- .687		AA	9.31	19.19	3	2	2.75-5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	PI	1800	Don	Pur	LN	AEG	108¾	47½	74½	00,0	22
2.16- .687		AA	9.31	19.19	3	2	2.75-5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	PI	1800	Don	Pur	LN	AEG	112¾	47½	74½	00,0	23
1.88- .546		AA	6.75	6.70	3	2	1.75-4.50	F	1040	12.50	10.62	7	3.75	AB	AB	C	PI	2000	Don	C-F	DR	Ele	89½	39¾	64½		24
3.25- .875		CI	13.00	93.0	4	2	3.25-7.62	F	4140	22.25	85.0	5	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	96	56¾	79¾		25
3.25- .875		CI	13.00	93.0	4	2	3.25-7.62	F	4140	22.25	85.0	6	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	112	56¾	79¾		26
3.25- .875		CI	13.00	93.0	4	2	3.25-7.62	F	4140	22.25	85.0	7	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	126	56¾	79¾		27
3.25- .875		CI	13.25	95.0	4	2	3.25-7.62	F	4140	22.25	85.0	7	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	140	56¾	80		28
3.25- .875		CI	13.00	93.0	4	2	3.25-7.62	F	4140	22.25	85.0	9	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	155	56¾	79¾		29
3.25- .875		CI	13.25	95.0	4	2	3.25-7.62	F	4140	22.25	85.0	9	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	169	56¾	80		30
2.19-		AA			4	2						5	5.75	BS					AM	Win	Own	A-EI	86½	35	68½		31
2.19-		AA			4	2						7	5.75	BS					AM	Win	Own	A-EI	87½	35	68½		32
2.19-		AA			4	2						7	5.75	BS					AM	Win	Own	A-EI	87½	35	68½		33
1⅛- .423		AA	5.53		3	2	1.62-3.23	F	1040	10.25		5	2.75	Own	Own	C	Si	750	Don	Com	Own	E-G	86¼	27¾	53	2A	34
1⅛- .434		AA	6.16		3	2	1.61-3.73	F	1040	10.25		5	3.50	Own	Own	C	Si	750	Don	Com	Own	E-G	90	30	43	1A	35
1⅛- .434		AA	6.16		3	2	1.61-3.73	F	1040	10.25		7	3.50	Own	Own	C	Si	750	Don	Com	Own	E-G	768¼	31¼	50	1A	36
2½- .5885		AA	8.19		3	1	2.38-4.73	F	1040	18.00		7	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	107½	57½	79	00	37
2½- .5885		AA	8.19		3	1	2.38-4.73	F	1040	18.00		7	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	103¼	57½	79	00	38
2½- .5885		AA	8.19		3	1	2.38-4.73	F	1040	18.00		5	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	82⅝	54½	79½	00	39
2½- .5885		AA	8.19		3	1	2.38-4.73	F	1040	18.00		5	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	83⅛	54½	78¼	00	40
1.94- .510		AA	6.38		3	2	1.75-4.35	F	1040	10.75		7	4.25	Own	Own	C	Si	750	Don	Pur	Own	AEG	71⅝	36⅜	58½		41
1.94- .510		AA	6.38		3	2	1.75-4.35	F	1040	10.75		7	4.25	Own	Own	C	Si	750	Don	Pur	Own	AEG	72⅝	36⅜	69½		42
2.06- .468		AA	8.19		3	1	2.38-4.73	F	1040	15.00		5	3.75	Own	Own	C	Si	1750	Don	Pur	Own	AEG	73½	39	65½		43
2.06- .468		AA	8.19		3	1	2.38-4.73	F	1040	15.00		7	3.75	Own	Own	C	Si	1750	Don	Pur	Own	AEG	81	42½	82		44
2.28- .589		AA	8.19		3	1	2.39-4.73	F	1040	18.00		5	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	83⅝	54½	79½		45
2.28- .589		AA	8.19		3	1	2.39-4.73	F	1040	18.00		7	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	106½	57½	78		46
1.06- .375		AA	3.75		3	1	1.12-	F	1035	7.00		3	2.37	Opt			Pi	1850	Opt	Opt	Opt	Ele	31⅝	19⅞	30¼	Opt	47
1.25- .328		AA	4.31		3	2	1.25-	F	1035	9.50		3	2.87	Opt			Pi	1850	Opt	Opt	Opt	Ele	33⅝	21½	35	Opt	48
1.25- .328		AA	4.31		3	2	1.25-	F	1035	9.50		3	2.87	Opt			Pi	1850	Opt	Opt	Opt	Ele	33⅝	21½	35	Opt	49
1.50- .437		AA	4.68		3	2	1.43-	F	1035	8.37		7	2.87	Opt			Pi	1850	Opt	Opt	Opt	Ele	47	27⅛	37½	Opt	50
1.65- .546		AA	5.93		3	2	1.50-	F	1035	10.50		7	3.25	Opt			Pi	1850	Opt	Opt	Opt	Ele	51½	31½	44½	Opt	51
1.50- .437		AA	4.68		3	2	1.25-	F	1035	8.37		7	2.87	Opt			Pi	1850	Opt	Opt	Opt	Ele	41½	25½	34½	Opt	52
1.65- .546		AA	5.93		3	2	1.50-	F	1035	10.50		7	3.25	Opt			Pi	1850	Opt	Opt	Opt	Ele	51½	27⅛	37½	Opt	53
1.91- .552		Alu	5.88		3	2	1.75-4.22	F	8640	10.50		7	3.75	Opt			Pi	1850	Opt	Opt	Opt	Ele	53½	30½	48½	Opt	54
1.91- .522		Alu	5.88		3	2	1.75-4.22	F	8640	10.50		7	3.75	Opt			Pi	1850	Opt	Opt	Opt	Ele	53½	30½	48½	Opt	55
1.19- .350		Alu	4.06		3	1	1.10-3.06	F	1035	8.38		3	2.62	Opt			Pi	1850	Opt	Opt	Opt	Ele				Opt	56
1.38- .406		Alu	5.94		3	2	1.49-3.71	F	1035	10.00		3	3.25	Opt			Pi	1850	Opt	Opt	Opt	Ele				Opt	57
1.63- .567		Alu	5.44	6.19	3	2	1.50-3.97	F	8637	8.38	4.68	5	3.50	Opt			Pi	1900	Opt	Opt	Opt	Ele				Opt	58
1.63- .567		Alu	5.44	6.19	3	2	1.50-3.97	F	8637	8.38	4.68	5	3.50	Opt			Pi	1900	Opt	Opt	Opt	Ele	43½	34	46½	Opt	59
1.0v- .352		AA	3.58		3	1	.998-2.66	F	1035	6.38	1.75	3	2.50				Pi	1850	Opt	Opt	Opt	Ele	27	19⅝	32½	Opt	60
1.25- .325		Alu	4.31		3	2	1.25-	F	1035	9.50		3	3.06	Opt			Pi	1850	Opt	Opt	Opt	Ele	33½	21	33½		61
1.38- .406		Alu	5.04	4.55	3	1	1.50-3.86	F	E4137H	9.50	6.75	7	3.88	Own	N		Mu		Fra	Fra		Ele	46½	26½	41¼	3	62
1.38- .406		Alu	5.04	4.55	3	1	1.50-3.50	F	E4137H	9.50	6.75	7	3.88	Own	N		Mu		Fra	Fra		Ele	46½	26½	41¼	3	63
1.16- .406		Alu	5.04	4.50	3	1	1.50-3.50	F	E4137H	9.50	6.75	7	3.88	Own	N		Mu		Fra	Fra		Ele	46½	26½	42½	2	64
1.38- .406		Alu	4.75	4.45	3	1	1.50-3.50	F	E4137H	9.50	6.75	7	3.88	Own	N		Mu		Fra	Fra		Ele	46½	25½	41¼	2	65
1.16- .406		Alu	5.04	4.45	3	1	1.50-3.50	F	E4137H	9.50	6.75	7	3.88	Own	N		Mu		Fra	Fra		Ele	46½	25½	42½	2	66
1.16- .406		Alu	5.04	4.50	3	1	1.50-3.50	F	E4137H	9.50	6.75	7	3.88	Own	N		Mu		Fra	Fra		Ele	47½	26½	43½	2	67
1.75- .500		Alu	6.25	9.16	3	1	2.00-4.38	F	E4137H	12.00	10.60	5	4.50	Own	N		Mu		Fra	Fra	Var	Ele	44½	31½	47½	2	68
1.75- .500		Alu	6.25	9.16	3	1	2.00-4.38	F	E4137H	12.00	10.60	5	4.50	Own	N		Mu		Fra	Fra		Ele	44½	31½	47½	2	69
1.56- .420		Alu	6.25	9.13	3	1	2.00-4.38	F	E4137H	12.00	10.60	5	4.50	Own	N		Mu		Fra	Fra		Ele	44½	26½	48½	2	70
1.56- .420		Alu	6.25	9.13	3	1	2.00-4.38	F	E4137H	12.00	10.60	5	4.50	Own	N		Mu		Fra	Fra	Var	Ele	44½	28½	53½	2	71
1.75- .500		CI	6.25	11.33	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	58½	30½	48½	2	72
1.75- .500		Alu	6.25	9.16	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	58½	30½	48½	2	73
1.75- .500		Alu	6.25	9.16	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	58½	30½	48½	2	74
1.75- .500		Alu	6.25	9.16	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	58½	32⅝	48½	1	75
1.75- .500		Alu	6.25	9.03	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	58½	32⅝	48½	1	76
1.56- .420		Alu	6.25	9.13	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	61¼	31⅜	48½	1	77
1.56- .420		Alu	6.25	9.13	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	61⅞	38½	48½	1	78
1.56- .420		Alu	6.25	9.13	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	61⅞	38½	48½	1	79
1.56- .420		Alu	6.25	8.93	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	60½	34⅛	48½	1	80

For abbreviations, see pages 228 and 229

For Directory of the Engine Manufacturers listed above, see Table of Contents

1957 AUTOMOTIVE DIESEL

Line Number	ENGINE MAKE AND MODEL	Built Under License from	GENERAL																VALVES	
			Designed for	Type	Number of Cylinders Bore and Stroke (In.)	Cylinder Liners—Type	Cycle	Piston Displacement (Cu. In.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittent Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	Arrangement	Intake Port Diameter and Lift (In.)
	Cummins—Continued																			
1	NHRS-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	300-2100	256-2100	204-1800	12.00		120	13.3	810-1525	2720	2985	VI	1.56- .420
2	NRT-6	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	300-2100	254-2100	201-1800	14.50		119	12.6	808-1550	2525	3030	VI	1.56- .420
3	NRTO-6	Own	T,B,Tr,M,I,R	DI	6-5½x6	W	4	743	335-2100	286-2100	225-1800	14.50		133	11.3	900-1500	2525	3015	VI	1.56- .420
4	NVH-1200	Own	Tr,M,R,I	DI	12-5½x6	W	4	1486	400-2100	340-2100	280-1800	15.50		82	18.4	1075-1200	5150	5700	VI	1.56- .420
5	VT-12	Own	Tr,M,R,I	DI	12-5½x6	W	4	1486	600-2100	495-2100	408-2100	13.50		100	11.0	1520-1825	5610	6100	VI	1.56- .420
6	VT-12	Own	Tr,M,I,R	DI	12-5½x6	W	4	1486	575-1800	485-1800	428-1800	13.50		126	13.1	1700-1675	5610	6100	VI	1.56- .420
7	L-600	Own	M,I,R	DI	6-7x10	W	4	2309	242-900	242-900	190-900			70	39.9	1220-567	7590	10440	VI	2.50- .682
8	LR-600	Own	M,R,I	DI	6-7¼x10	W	4	2477	300-1100	300-1100	210-900	13.50		74	36.0	1285-650	7590	9240	VI	2.50- .682
9	LRT-6	Own	M,I,R	DI	6-7¼x10	W	4	2477	450-1100	450-1100	300-900			107	25.6	2260-800	7700	9500	VI	2.50- .682
10	HHR-600	Own	T,B,R	DI	6-5½x6	W	4	743	165-1800	140-1800	124-1800	15.50		73	18.7	516-1275	2330	2595	VI	1.75- .500
11	HHRF-600	Own	T,B,R	DI	6-5½x6	W	4	743	180-2000	153-2000	128-1800	15.50		76	18.6	550-1325	2385		VI	1.75- .500
12	NHH-600	Own	T,B,R	DI	6-5½x6	W	4	743	210-2100	178-2100	146-1800	15.50		81	16.6	550-1590	2420	2780	VI	1.56- .420
13	NHHT-6	Own	T,B,R	DI	6-5½x6	W	4	743	250-2100	212-2100	172-1800	15.50		102	14.6	695-1500	2515	3020	VI	1.56- .420
14	NHHRS-600	Own	T,B,R	DI	6-5½x6	W	4	743	300-2100	256-2100	204-1800	12.00		120	13.3	810-1625	2720	2985	VI	1.56- .420
15	NHHRT-6	Own	T,B,R	DI	6-5½x6	W	4	743	300-2100	254-2100	201-1800	14.50		119	12.6	808-1550	2525	3030	VI	1.56- .420
16	Deutz†† (1)F4L-612		Tr,I,M	TC	4-3½x4⅝		4	186		44-2200	32-1800	17.50		84		116-1600				
17	(3)F-A8L-614		T,B,Tr,M,R,I		8-4⅝x5½		4	649		160-2250	112-1800	17.00	995	87	16.7	415-1200	1874		VI	1.75-8.63
18	Fageol-Leyland 600	Leyland	T,B,Tr,M,R,I	DI	6-4.8x5½	D	4	597	160-2225			15.75	1000			455-1200	1625	1625	VI	1.90- .500
19	680	Leyland	T,B,Tr,M,R,I	DI	6-5x5¾	D	4	677	180-2225			15.75	1000			540-1100	1625	1625	VI	2.00- .500
20	Fairbanks- 4SC3½		M,I	PC	1-3½x4	W	4	30.7		6.5-1800	5.25-1800	16.90	850	80	.8	19-		430	VI	1.25-
21	Morse 4SC4½		M,I	PC	1-4½x4½	W	4	60.1		13.2-1800	10.5-1800	16.90	850	80	6.1	30-		650	VI	
22	4SC4½.2		M,I	PC	2-4½x5½	W	4	140	37-	36.2-	32-	16.00	850	96	21.4			690	VI	1.39-
23	4SA4½		M,I	PC	2-4½x5	W	4	142	33-2000	25-1800	22-1800	18.00	625	68	68.1	100-1200		1500	VI	1.37- .313
24	4SA6½		M,I	PC	3-4½x5	W	4	213	50-2000	38-1800	34-1800	18.00	625	69	51.4	161-2000		1750	VI	1.37- .313
25	4SB4½		M,I	DI	2-4½x5½	W	2	174	91-1800	67.5-1800	58-1800	16.00	1200	73	23.3	210-800		1350	VI	
26	4SB6½		M,I	DI	3-4½x5½	W	2	262	120-1800	110-1800	90-1800	16.00	1200	78	18.9	315-800		1700	VI	
27	4SB8½		M,I	DI	2-4½x5½	W	2	350	170-1800	150-1800	127-1800	16.00	1200	78	15.7	440-800		2000	VI	
28	4SB12½		M,I	DI	6-4½x5½	W	2	525	280-1800	230-1800	180-1800	16.00	1200	78	14.2	630-800		2550	VI	
29	4SA4		M,I	PC	2-4x5	W	4	126		23-1800	16-1200	18.00		84	101.2	96-		1620	VI	
30	4SA4		M,I	PC	3-4x5	W	4	188		34-1800	25-1200	18.00		87	78.6	140-		1965	VI	
31	4SAS3½		I	PC	2-3½x4		4	76.8	20.3-2800	15-1800	13.5-1800	18.00		78	40.7		550		VI	
32	4SA4½		M,I	DI	4-4½x5	W	4	318	78.5-2000	56.2-1800	51.4-1800	22.00	650	87	33.1		1700	2100	VI	1.37- .313
33	General Motors 4-51	Own	I,Tr	DI	4-4.1x4.1	D	2	217		95-3000	60-2200■	18.00	1300	50	19.6	189-1600	1180			No Valves
34	4-51	Own	T	DI	4-4.1x4.1	D	2	217		100-3000■		18.00	1300				1035			No Valves
35	2-71	Own	Tr,I	DI	2-4½x5	D	2	142		65-2000■	48-1800■	17.00	1225	74	20.0	184-1400	960		VI	No Valves
36	3-71	Own	I,Tr	DI	3-4½x5	D	2	213		102-2100■	73-1800■	17.00	1225	77	20.3	277-1400	1525		VI	No Valves
37	4-71	Own	I,Tr	DI	4-4½x5	D	2	284		150-2300■	101-1800■	17.00	1225	78	17.6	375-1600	1780		VI	No Valves
38	4-71	Own	B,T	DI	4-4½x5	D	2	284		150-2300■		17.00	1225				1570		VI	No Valves
39	4-71T	Own	T,B,Tr,I	DI	4-4½x5	D	2	284	171-2300		120-1800	17.00	1225	78	14.7	375-1600	1760		VI	No Valves
40	6-71	Own	I,Tr	DI	6-4½x5	D	2	426		230-2100	154-1800■	17.00	1225	80	14.2	574-1600	2190		VI	No Valves
41	6-71	Own	B,T	DI	6-4½x5	D	2	426		230-2100		17.00	1225				1975		VI	No Valves
42	6-71T	Own	T,B,Tr,I	DI	6-4½x5	D	2	426	236-2100		180-1800	17.00	1225	80	12.0	574-1600	2165		VI	No Valves
43	6-110	Own	T,Tr,I	DI	6-5x5.6	D	2	660		300-2000■	230-1800■	18.00	1250	77	14.2	849-1400	3260		VI	No Valves
44	Twin 4-71	Own	I	DI	8-4½x5	D	2	568		286-2100■	202-1800■	17.00	1225	78	23.9	1310-915Sh	4820‡		VI	No Valves
45	Twin 6-71	Own	I	DI	12-4½x5	D	2	851		422-2100	308-1800	17.00	1225	80	18.2	2010-915Sh	5620		VI	No Valves
46	Twin 6-110	Own	I	DI	12-5x5.6	D	2	1320		600-2000■	460-1800■	18.00	1250	77	24.8	2975-800Sh	11400		VI	No Valves
47	Quad 6-71	Own	I	DI	24-4½x5	D	2	1702		844-2100	616-1800	17.00	1225	80	20.2	4020-915Sh	12425‡		VI	No Valves
48	GrayMarine Four-D129	Cont	M	TC	4-3½x3⅞	W	4	129		30-2600	25-2000	16.25		77	28.0	87-1200		700	VI	1.25- .352
49	Four-D157		M	TC	4-3⅝x4⅝	W	4	157			30-1800	15.00		84	34.2	106-1800		1100	VI	1.16- .273
50	Four-D277	Cont	M	TC	4-4x5½	W	4	277			65-2000	16.10		93	22.2	171-2000		1440	VI	1.37- .248
51	Six-D427	Lanova	M	TC	6-4⅛x4½	N	4	427			100-2200	14.40		85	14.6	250-2200		1475	VI	1.72- .440
52	Six-D572		M	TC	6-4⅝x5⅝	D	4	572			135-2200	15.00		85	16.6	401-1600		2510	VI	1.87- .546
53	Hallett AC1	Own	Tr,I	PC	1-3½x3⅝	N	4	35	6.8-2000	5.5-1800	5-1800	21.50	1000	80	37.0	21-1800	185		VI	1.25- .316
54	DI-A	Own	I,M	PC	1-3⅞x4½	N	4	60	10-1800	10-1800	8-1800	21.60	1000	84	56.2‡	32-1800	450	625	VI	1.62- .312
55	D2	Own	I,M	PC	2-3⅞x4½	N	4	100	22.5-1800	20-1800	18-1500	21.60	1000	97	33.0‡	64-1800	690	760	VI	1.62- .316
56	AC2	Own	I,M,Tr	PC	2-3½x3⅝	N		72.2	18.5-2200	18-2200	13-1800	20.00	565	82	30.7‡	42-1800	400	475	VI	1.25- .316
57	WC2	Own	I,M,Tr	PC	2-3½x3⅝	N		72.2	18.5-2200	18-2200	13-1800	20.00	565	82	34.6‡	42-1800	450	525	VI	1.25- .316
58	Hercules DIX-83		Tr,M,I	TC	2-3⅝x4	D	4	83	24-2200	20-2200	20-2200	15.50	625	87	20.0	60-1800	400		VI	1.56- .350
59	DIXC	Own	Tr,M,I	TC	2-4x4½	D	4	113	27-1800	23-1800	23-1800	15.50	750	92	23.9	81-1400	550		VI	1.62- .375
60	DIXD	Own	Tr,M,I	TC	2-4¼x4½	D	4	127	30-1800	26-1800	26-1800	15.50	750	88	21.6	91-1300	550		VI	1.62- .375
61	DIX4B	Own	T,B,Tr,M,R,I	TC	4-3¼x4	D	4	133	46-3000	39-3000	33-2200	15.50	825	89	18.3	96-1500	600		VI	1.37- .350
62	DIX4D	Own	T,B,Tr,M,R,I	TC	4-3⅝x4	D	4	165	57-3000	48-3000	41-2200	15.50	825	90	14.6	120-1500	600		VI	1.56- .350
63	DD173		Tr,M,R,I	DI	4-3½x4½	D	4	173	50-2000	42.5-2000	40-1800	16.20	750	101	15.0	136-1500	600		VI	1.44- .369
64	DD198		Tr,M,R,I	DI	4-3⅝x4½	D	4	198	55-2000	46.5-2000	45-1800	16.20	750	100	13.3	156-1500	600		VI	1.44- .369
65	DOOB	Own	T,Tr,M,I,B	TC	4-3⅝x4½	D	4	198	62-2600	53-2600	41-1800	15.50	750	91	18.3	142-1400	750		VI	1.62- .375
66	DOOC	Own	T,Tr,M,I,B	TC	4-4x4½	D	4	226	70-2600	60-2600	47-1800	15.50	750	91	15.9	162-1400	750		VI	1.62- .375
67	DD226		Tr,M,R,I	DI	4-4x4½	N		226	65-2000	55-2000	52-1800	16.20	750	101	11.5	176-1500	600		VI	1.44- .369
68	DIX6D	Own	Tr,M,B,R,T,I	TC	6-3⅝x4	D	4	249	93-3000	79-3000	67-2200	15.50	825	96	12.0	186-1800	800		VI	1.56- .350
69	DOOD	Own	T,Tr,M,I,B	TC	4-4¼x4½	D	4	255	79-2600	68-2600	53-1800	15.50	750	91	14.2	182-1400	750		VI	1.62- .375
70	DJXB	Own	T,B,Tr,M,R,I	TC	6-3½x4½	D	4	260	77-2600	66-2600	51-1800	15.50	750	87	18.6	179-1300	950		VI	1.62- .375
71	DD260		Tr,M,R,I	DI	6-3½x4½	N	4	260	75-2000	63.5-2000	60-1800	16.20	750	101	12.5	206-1500	750		VI	1.44- .369
72	DIX6-272		T,B,Tr,M,R,I	TC	6-3½x4	D	4	272	102.5-3000	87-3000	72-2200	15.50	825	96	11.1	204-1800	800		VI	1.56- .350
73	DJXC	Own	T,B,Tr,M,R,I	TC	6-3⅝x4½	D	4	298	83-2600	71-2600	59-1800	15.50	750	87	16.1	206-1300	950		VI	1.62- .375
74	DJXH	Own	T,B,Tr,M,I	TC	6-3⅝x4½	D	4	298	99-2600	84-2600	67-1800	15.50	750	99	14.2	234-1400	950		VI	1.75- .375
75	DJXHF		T,B,M,R	TC	6-3⅝x4½	D	4	298	99-2600	84-2600	67-1800	15.50	750	99	14.1	234-1400	950		VI	1.75- .375
76	DD298		Tr,M,R,I	DI	6-3⅝x4½	D		298	85-2000	72.5-2000	68-1800	16.20	750	101	11.0	232-1500	750		VI	1.44- .369
77	DD339		Tr,I	DI	6-4x4½	N	4	339	99-2000	84-2000	78-1800	16.20	750	101	9.6	262-1500	750		VI	1.44- .369
78	DWXC	Own	T,B,Tr,M,R,I	TC	6-4x4⅝	D	4	358	120-2600	102-2600	80-1800	15.50	750	98	16.9	284-1600	1350		VI	1.68- .395
79	DIXV8		T,B	TC	8-4x4	D	4	402	160-3000	136-3000	108-2200	15.00	750	97	9.7	310-1800	1050		VI	1.62- .347
80	DWXD	Own	T,B,Tr,M,R,I	TC	6-4¼x4¼	D	4	404	135-2600	115-2600	91-1800	15.50	750	99	14.8	320-1600	1350		VI	1.68- .395
81	DWXLD	Own	T,B,Tr,M,R,I	TC	6-4¼x5	D	4	426	142-2600	121-2600	95-1800	15.50	750	98	14.2	333-1600	1350		VI	1.68- .395

For abbreviations, see pages 228 and 229

For Directory of the Engine Manufacturers listed above, see Table of Contents

ENGINES—*continued*

VALVES		PISTON					PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM							START-ING METHOD		OVERALL DIMENSIONS				
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked In—	Materials (S. A. E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)	Air Cleaner—Make	Fuel Filter—Make	Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)	Clutch Housing (S.A.E. Numbers)	Line Number
1.56-.420	Alu	6.00	8.83	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	60 7/16	34 3/16	48 11/16	1	1
1.56-.420	Alu	6.25	8.93	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	60 7/16	38 3/16	48 3/16	1	2
1.56-.420	Alu	6.25	8.93	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra	Var	Ele	60 7/16	38 3/16	48 3/16	1	3
1.56-.420	Alu	6.25	9.13	3	1	2.00-4.38	F	E4137H	12.00	12.50	7	5.00	Own	N		Mu		Vor	Fra		Ele	73 5/16	49 5/16	50	0	4
1.56-.420	Alu	6.25	8.93	3	1	2.00-4.38	F	E4137H	12.00	12.50	7	5.00	Own	N		Mu		Vor	Fra		Ele	73 5/16	40 1/16	61 11/16	0	5
1.56-.420		6.25	8.93			2.00-4.38	F	E4137H	12.00	12.50	7	5.00	Own			Mu		Vor					40 1/16	61 11/16	0	6
2.50-.682		10.7	41.35			2.88-5.97	F	C1040	18.00	30.00	7	5.50	Own			Mu		Vor				98	39 1/16	58 5/16	0	7
2.50-.682	Alu	10.37	29.10	3	2	2.88-5.97	F	C1040	18.00	30.00	7	5.50	Own	N		Mu		Vor	Fra			99 1/16	39 1/16	58 5/16	0	8
2.50-.682	Alu	10.4	29.10	3	2	2.88-5.97	F	C1040	18.00	30.00	7	5.50	Own	N		Mu		Vor	Fra	Var		110	39 1/16	58 5/16	0	9
1.75-.500		6.25	9.16			2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own			Mu		Fra				65 11/16	59 11/16	24 1/16	2	10
1.75-.500		6.25	9.16			2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own			Mu		Fra				65 11/16	59 11/16	24 1/16	2	11
1.56-.420	Alu	6.25	9.13	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	65 11/16	61 1/16	22 5/16	1	12
1.56-.420	Alu	6.25	9.13	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	65 11/16	67 1/16	22 5/16	1	13
1.56-.420		6.06	8.83			2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own			Mu		Fra				77 11/16	61 5/16	22 5/16	1	14
1.56-.420	Alu	6.25	8.93	3	1	2.00-4.38	F	E4137H	12.00	10.60	7	4.50	Own	N		Mu		Fra	Fra		Ele	65 11/16	67 1/16	22 5/16	1	15
													Own	Own						AB	E-H					16
1.63-6.63	AA	6.06	9.98	3	2	1.50-3.63	F	5132	10.88	7.01	5	3.53	AB	AB	C	Si	125	MH	BK	AB		47 7/16	47 1/4	39 1/4		17
1.60-.500	AA	6.60	7.21	3	2	1.63-4.20	F	EN16S	10.50	7.38	7	3.50	CBR	Own	C	Mu	2100	Opt	Opt	L-D	Ele	52 1/4	25 5/16	40	1,2,3	18
1.70-.500	AA	6.60	7.35	3	2	1.63-4.40	F	EN16S	10.50	7.38	7	3.50	CBR	Own	C	Mu	2100	Opt	Opt	L-D	Ele	52 1/4	25 5/16	40	1,2,3	19
1.00-	Alu			3	1		F				2	2.00	Dem	Dem	C	Pi	1750	AC	AC	AL	E-H	18		21 1/2		20
	Alu			3	1		F				2	2.50	Dem	Dem	C	Pi	1750	AC	AC	AL	E-H	30		34		21
	Alu			3	2		F						B-D	B-D	C	Pi	2000	AC	AC	AL	A-EI					22
1.37-.313	CI	5.93	6.20	3	2	1.50-4.00	F	1035	10.87	6.60	3	2.75	Own	Own	O	Si		AM	Fra	AL	Opt	30	23	38		23
1.37-.313	CI	5.31	6.20	3	2	1.50-4.00	F	1035	10.87	6.60	4	2.75	Own	Own	O	Si		AM	Fra	AL	Ele	35	23	38		24
2.30-.520	Alu	6.36	6.75	3	2	1.75-3.85	F	1141	11.87	8.25	3	4.00	RM	AB	C	Si	2200	Don	Com	AL	A-EI	32 1/4	28 1/4	40 7/16	1	25
2.30-.520	Alu	6.36	6.75	3	2	1.75-3.85	F	1141	11.87	8.25	4	4.00	RM	AB	C	Si	2200	Don	Com	AL	A-EI	38 7/16	28 1/4	40 7/16	1	26
2.30-.520	Alu	6.36	6.75	3	2	1.75-3.85	F	1141	11.87	8.25	5	4.00	RM	AB	C	Si	2200	Don	Com	AL	A-EI	45 1/16	28 1/4	40 7/16	1	27
2.30-.520	Alu	6.36	6.75	3	2	1.75-3.85	F	1141	11.87	8.25	7	4.00	RM	AB	C	Si	2200	Don	Com	AL	A-EI	59 1/16	28 1/4	40 7/16	1	28
	CI			3	2		F	1035			3	2.75	Own	Own	O	Si		AM	Fra	AL	E-H	44 5/16	28	45		29
	CI			3	2		F	1035			4	2.75	Own	Own	O	Si		AM	Fra	AL	E-H	54	30	46 1/2		30
	CI						F				3	2.00	Own	Own	O	Si		AM	Fra	AL	E-H	33	22	31		31
1.37-.313	CI	5.54	6.82	3	2	1.50-4.18	F	1035	10.87	6.60	5	3.19	Own	Own	O	Si		AM	Fra	AL	Ele	52	24	40		32
No Valves	AT	5.06	6.10	4	2	1.38-3.37	F	1141A	8.40	3.93	5	3.62	Own	Own	C	Mu	350	Don	Com	DR	Ele	38 1/2	28 1/2	33 1/4	2	33
No Valves	AT	5.06	6.10	4	2	1.38-3.37	F	1141A	8.40	3.93	5	3.62	Own	Own	C	Mu	350	Don	Com	DR	Ele	38 1/2	26 1/2	32 1/2	2	34
1.56-.375	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	3	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	31	28 1/4	40 1/2	2	35
1.58-.394	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	4	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	37 1/16	29 1/2	40 1/2	2	36
1.58-.394	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	5	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	42 7/16	29 1/2	41 1/4	2	37
1.58-.394	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	5	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele				2	38
1.20-.394	AT	6.00	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	5	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	43 3/16	45 1/16	40 1/2		39
1.58-.394	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	7	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	54 1/16	29 1/2	42 1/2	1	40
1.58-.394	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	7	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele				1	41
1.58-.394	AT	6.00	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	7	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	55 1/16	33 1/16	47 1/16		42
1.93-.454	AT	6.50	11.00	4	2	1.63-4.34	F	1141A	10.60	7.36	7	4.00	Own	Own	C	Mu	450	Don	Com	DR	Ele	62 5/16	37 1/16	49 1/16	1/2	43
1.58-.394	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	10	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	83	56	57 1/2		44
1.58-.394	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	14	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	94 1/16	56	57 1/2		45
1.93-.454	AT	6.50	11.00	4	2	1.63-4.34	F	1141A	10.60	7.36	14	4.00	Own	Own	C	Mu	450	Don	Com	DR	Ele	125 5/16	66	87 1/16		46
1.58-.394	AT	6.16	7.83	4	2	1.50-3.62	F	1141A	10.12	6.14	28	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	181 5/16	57 1/16	68 5/16		47
1.00-.352	Alu	3.58		3	1	.968-2.68	F	1035	6.38		3	2.50	RM			Pi	1850	N	Fra	DR	Ele	44 3/4	24 5/16	28 1/16		48
1.09-.273	AA	3.75		3	2	1.12-2.75	F	1035	7.00		3	2.47	RM	AB		Pi	1800	Own	ACB	AL	Ele	50	20 1/2	30 1/2	3	49
1.25-.248	AA	4.31	4.00	3	2	1.25-3.31	F	1035	9.50		3	2.88	RM	AB		Pi	1850	N	Fra	DR	Ele	56	26 5/16	39 1/16	3	50
1.50-.440	Alu	4.68		3	2	1.43-3.62	F		8.37		7	2.87	RM	AB		Pi	1800	Own	Pur	DR	Ele	67	28	27	3	51
1.66-.546	AA	6.00		3	2	1.50-4.00	F	1035	10.50	4.72	5	3.37	AB	AB		Pi	1800	Own	Fra	DA	Ele	72	26	40 5/16	1	52
1.28-.316	AA		2.25	4	1	1.31-2.98	F	4140	7.00	2.75	2	RB	AB	AB		Pi	1800	AM	Pur	AL	Ele	20 7/16	15	25 1/16		53
1.62-.313	Alu	5.25	4.00	4	1	1.37-3.40	F	1045	9.00	4.67	2	RB	AB	AB		Pi	1800	AM	Pur	AL	Ele	28	24	30 1/16		54
1.62-.318	Alu	5.25	4.00	4	1	1.37-3.40	F	1045	9.00	4.67	2	RB	AB	AB		Pi	1600	AM	Com	AL	Ele	32 7/16	23	30		55
1.28-.316	AA	3.88	2.25	4	1	1.31-2.96	F	4140	7.00	2.75	2	RB	AB	AB		Pi	1800	AM	Pur	AL	E-H	33	25	28		56
1.28-.316	AA	3.88	2.25	4	1	1.31-2.96	F	4140	7.00	2.75	2	RB	AB	AB		Pi	1800	AM	Pur	AL	Ele	33	25	28		57
1.12-.380	Alu	4.03	3.20	3	2	1.13-2.87	F	CNM	7.75	4.20	3	2.75	AB	AB	C	Pi	1650			LDA	A-EI	19 1/4	21 1/16	30 1/16		58
1.12-.375	Alu	4.84	4.00	4	2	1.18-3.45	F	CNM	8.00	5.31	2	3.81	AB	AB	C	Pi	1450			DR	EAH	23 1/16 (2)	19 1/4	36 1/16	2	59
1.12-.378	Alu	4.84	4.47	4	2	1.18-3.70	F	CNM	8.00	5.31	2	3.81	AB	AB	C	Pi	1450			DR	EAH	23 1/16 (2)	19 5/16	36 1/16	2	60
1.12-.360	Alu	4.03	3.20	3	2	1.12-2.62	F	CNM	7.75	4.20	5	2.75	AB	AB	C	Pi	1650			LDA	AEL	29 11/16 (2)	21 1/16	30 1/16	2,4	61
1.12-.360	Alu	4.03	3.20	3	2	1.12-2.87	F	CNM	7.75	4.20	5	2.75	AB	AB	C	Pi	1650			LDA	AEL	29 11/16 (2)	21 1/16	30 1/16	2,4	62
1.28-.369	AA	5.00		3	2	1.13-2.84	F	3140	8.00	2.72	8	2.50	A-R	AB	C	Mu	3000			LDA	Ele	31 11/16	22 1/16	33		63
1.28-.369	AA	5.00	3.35	3	2	1.13-3.03	F	3140	8.00		8	2.50	A-R	AB	C	Mu	3000			LDA	Ele	31 11/16	22 1/16	33		64
1.12-.375	Alu	4.84	3.56	4	2	1.18-3.20	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650			LDA	AEG	32 7/16 (2)	22 1/4	38	1,6	65
1.12-.375	Alu	4.84	4.00	4	2	1.18-3.45	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650			LDA	AEG	32 7/16 (2)	22 1/4	38	1,6	66
1.28-.369	AA	5.00		3	2	1.13-3.34	F	3140	8.00	2.72	8	2.50	A-R	AB	C	Mu	3000	Opt	Opt	LDA	Ele	31 11/16	20 1/16	33		67
1.12-.350	Alu	4.03	3.20	3	2	1.12-2.87	F	CNM	7.75	4.20	7	2.75	AB	AB	C	Pi	1650			LDA	AEG	38 7/16 (2)	23 1/2	37 11/16	2,4	68
1.12-.375	Alu	4.84	4.47	4	2	1.18-3.70	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650			LDA	AEG	32 7/16 (2)	22 1/4	36	1,6	69
1.12-.375	Alu	4.84	3.12	4	2	1.18-2.95	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650			LDA	AEG	39 (2)	22 1/4	32 1/16	1,3	70
1.28-.369	AA	5.00		3	2	1.13-2.84	F	3140	8.00	2.72	7	2.50	A-R	AB	C	Mu	3000			LDA	Ele	40 7/16	22 1/16	35 1/16		71
1.12-.350	Alu	4.03	3.50	3	2	1.12-3.00	F	CNM	7.75	4.20	7	2.75	AB	AB	C	Pi	1650			LDA	AEG	38 7/16	23 1/2	37 11/16		72
1.12-.375	Alu	4.84	3.56	4	2	1.18-3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650			LDA	AEG	39 (2)	22 1/4	32 1/16	1,3	73
1.31-.375	Alu	4.84	3.56	3	2	1.18-3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650			LDA	AEG	39 (2)	22 1/4	34 1/16	1,3	74
1.31-.375	Alu	4.84	3.56	4	2	1.19-3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650			LDA	A-EI	39 1/4	34	23 7/16		75
1.28-.369	AA	5.00	3.35	3	2	1.13-3.03	F	3140	8.00	2.72	7	2.50	A-R	AB	C	Mu	3000			LDA	Ele	40 7/16	22 1/16	35 1/16		76
1.28-.369	AA	5.00		3	2	1.13-3.34	F	3140	8.00	2.72	7	2.50	A-R	AB	C	Mu	3000					40 7/16	22 1/16	35 1/16		77
1.28-.395	Alu	4.84	4.00	3	2	1.80-3.62	F	CNM	8.50	7.31	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	44 5/16 (2)	27	42 1/16	1,3	78
1.37-.347	Alu	4.03	3.75	3	2	1.13-3.38	F	CNS	7.75	4.00	5	3.50		AB	C	Pi	2000				Ele	38 1/16	32 1/16	37 1/16		79
1.28-.395	Alu	4.84	4.47	3	2	1.80-3.62	F	CNM	8.50	7.00	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	44 5/16 (2)	27	42 1/16	1,3	80
1.25-.395	Alu	4.84	4.47	3	2	1.50-3.62	F	CNM	8.50	7.00	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	44 5/16 (2)	27	42 1/16	1,3	81

For abbreviations, see pages 228 and 229

For Directory of the Engine Manufacturers listed above, see Table of Contents

1957 AUTOMOTIVE DIESEL

Line Number	ENGINE MAKE AND MODEL	Built Under License from	GENERAL																VALVES	
			Designed for	Type	Number of Cylinders Bore and Stroke (In.)	Cylinder Liners—Type	Cycle	Piston Displacement (Cu. In.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittent Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	Arrangement	Intake Port Diameter and Lift (In.)
	Hercules—Continued																			
1	DWXLDF	Own	B,M,R	TC	6-4¼x5	D	4	426	142-2600	121-2600	90-1800	15.50	750	93	14.7	319-1400	1325	.....	VI	1.69- .395
2	DRXB	Own	T,B,Tr,M,R,I	TC	6-4⅝x5¼	D	4	474	134-2200	114-2200	90-1600	15.00	750	95	17.8	358-1200	1600	.....	VI	2.00- .395
3	DRX-501	.....	B	TC	6-4½x5¼	D	4	501	139-2200	118-2200	96-1600	15.00	750	95	16.7	375-1500	1600	.....	VI	2.00- .395
4	TCD-501	.....	T,B,Tr,M,R,I	TC	6-4½x5¼	D	4	501	180-2000	153-2000	122-1600	15.00	750	120	16.4	480-1800	2000	.....	VI	2.00- .395
5	DRXC	Own	T,B,Tr,M,R,I	TC	6-4⅝x5¼	D	4	529	147-2200	125-2200	100-1600	15.00	750	95	16.0	400-1100	1600	.....	VI	2.00- .395
6	DFXB	Own	T,B,M,Tr,I	TC	6-5x6	D	4	707	190-2100	162-2100	136-1600	14.80	750	95	18.4	530-1350	2500	.....	VI	2.37- .500
7	DFXC	Own	T,B,M,Tr,I	TC	6-5¼x6	D	4	779	204-2100	173-2100	149-1600	14.80	750	95	16.8	585-1350	2500	.....	VI	2.37- .500
8	DFXD	Own	T,B,M,Tr,I	TC	6-5½x6	D	4	855	217-2100	184-2100	162-1600	14.80	750	94	15.4	645-1200	2500	.....	VI	2.37- .500
9	DFXE	Own	T,B,Tr,M,R,I	TC	6-5⅝x6	D	4	895	228-2100	194-2100	170-1600	14.80	750	94	14.7	680-1200	2500	.....	VI	2.37- .500
10	TCD-895	.....	T,B,Tr,M,R,I	TC	6-5⅝x6	D	4	895	318-2000	280-2000	218-1600	14.80	750	120	13.7	846-1800	3000	.....	VI	2.61- .500
11	DFXH	Own	T,B,Tr,M,R,I	TC	6-5¾x6	D	4	935	260-2100	221-2100	187-1600	14.80	750	99	13.9	750-1200	2600	.....	VI	2.60- .500
12	DFXHF	Own	B,M,R	TC	6-5¾x6	D	4	935	260-2100	221-2100	187-1600	14.80	750	99	13.9	750-1230	2600	.....		2.60- .500
13	DNXV8D	Own	T,B,Tr,M,I	TC	8-6¼x6	D	4	1468	388-1800	330-1800	260-1600	14.80	750	94	15.1	1100-1200	4200	.....	VI	2.87- .500
14	TCD-1468	Own	M,I	TC	8-6¼x6	D	4	1468	500-1800	425-1800	345-1600	14.80	750	115	13.9	1380-1600	4800	.....	VI	2.87- .500
15	Hill 2R	Own	M,I	PC	2-3½x5½	D	4	106	19-1500	17.3-1500	16.6-1500	16.00	....	85	64.0‡	69-1200	1225	1300	VI	1.37- .372
16	4R	Own	M,I	PC	4-3½x5½	D	4	212	41-1500	36.3-1500	33-1500	16.00	....	85	44.0‡	142-1200	1615	1750	VI	1.37- .372
17	6R	Own	M,I	PC	6-3½x5½	D	4	317	63-1500	55-1500	50-1500	16.00	....	85	37.5‡	225-1200	2150	2300	VI	1.37- .372
18	4F	Own	M,I	PC	4-3¾x5½	D	4	243	48-1500	41-1500	39-1500	16.50	....	90	41.4‡	175-1200	1615	1750	VI	1.37- .372
19	6F	Own	M,I	PC	6-3¾x5½	D	4	364	72-1500	61.5-1500	58-1500	16.50	....	90	37.1‡	262-1200	2150	2300	VI	1.37- .372
20	6K	Own	M,I	PC	6-4¼x5½	D	4	468	88-1500	72-1500	68-1500	17.00	....	89	31.6‡	290-1200	2150	2300	VI	1.57- .372
21	International UD264	Own	Tr,I	PC	4-4x5¼	D	4	264	57.5-1800	55-1800	42.7-1800	16.40	....	71	29.3	191-1100	1250	.....	VI	1.50- .500
22	UD-350	Own	Tr,I	PC	4-4¼x5½	D	4	350	76.5-1800	75-1800	58-1800	15.61	....	73	27.6	252-1250	1600	.....	VI	1.66- .500
23	UD14A	Own	Tr,I	PC	4-4¾x6½	W	4	461	105-1800	76-1400	60.8-1400	15.00	....	75	29.2	345-1050	1775	.....	VI	1.78- .532
24	UD525	Own	I	PC	6-4¼x5½	D	4	525	141-2300	115-1800	86.5-1800	15.40	....	72	28.3	388-1230	2190	.....	VI	1.66- .532
25	UD18A	Own	Tr,I	PC	6-4¾x6½	W	4	691	131-1600	125-1600	100-1600	16.50	....	72	28.6	470- 900	2860	.....	VI	1.78- .532
26	UD1091	Own	Tr,I	PC	6-5¼x7	D	4	1091	213-1500	200-1500	152-1400	15.00	....	79	26.9	820-1050	4095	.....	VI	2.31- .625
27	Mack END673	.....	T,B	AS	6-4⅞x6	D	4	672	170-2100	159.4-2100†	.....	16.59	1250	.....	.....	480-1200	1927	.....	VI	2.05- .563
28	END673	.....	T,B	AS	6-4⅞x6	D	4	672	206-2100	190-2100	.....	16.59	1575	125	.....	560-1400	1930	.....	VI	2.05- .563
	Minneapolis-Moline																			
29	D283	Own	Tr,I	Ach	4-4¼x5	N	4	294	49-1300	46-1300	46-1300	14.90	....	99	34.6	210-1100	1590	.....	VI	1.50- .494
30	D425	Own	Tr,I	Ach	6-4¼x5	N	4	426	78-1400	74-1400	74-1400	14.90	....	98	29.6	320- 950	2190	.....	VI	1.50- .494
31	Murphy ME-4, ME-80	Own	I,M	DI	4-5¾x6½	W	4	675	.....	112-1200	98-1200	16.00	....	88	44.8‡	475- 950	‡4300	‡6850	V4	1.62- .500
32	11, AA-107	Own	I,M	DI	4-5¾x6½	W	4	675	.....	117-1200	107-1200	16.3	....	98	40.3‡	530- 800	‡4300	‡6850	V4	1.62- .500
33	*111, AAA-123	Own	I,M	DI	4-5¾x6½	W	4	675	.....	133-1200	123-1200	16.0	....	112	35.4‡	560-1050	‡4350	‡6825	V4	1.62- .500
34	12, AB-117	Own	I,M	DI	4-6x6½	W	4	735	.....	127-1200	117-1200	16.00	....	99	36.8‡	600- 750	‡4300	‡6850	V4	1.62- .500
35	*112	Own	I	DI	4-6x6½	W	4	735	.....	140-1200	133-1200	16.0	....	112	32.7	640- 950	‡4350	.....	V4	1.62- .500
36	20, BJ-144	Own	I,M	DI	6-5¼x6½	W	4	927	.....	159-1200	144-1200	16.0	....	96	36.1‡	710- 600	‡5200	‡8000	V4	1.37- .500
37	*20G	.....	.....	.....	6-5¼x6½	W	...	927	.....	159-1200	144-1200	.....	....	96	36.1	700- 600	‡5200	.....	V4	.....
38	*120, ABJ-156	Own	I,M	DI	6-5¼x6½	W	4	927	.....	170-1200	155-1200	16.0	....	103	34.2‡	740- 600	‡5300	‡8285	V4	1.37- .500
39	21	Own	I	DI	6-5¾x6½	W	4	1013	.....	176-1200	161-1200	16.00	....	98	32.3	825- 600	‡5200	.....	V4	1.62- .500
40	*21G	.....	.....	.....	6-5¾x6½	W	...	1013	.....	176-1200	161-1200	.....	....	98	32.3	805- 600	‡5200	.....	V4	.....
41	*121	Own	I	DI	6-5¾x6½	W	4	1013	.....	202-1200	182-1200	16.00	....	111	29.3	860- 850	‡5300	.....	V4	1.62- .500
42	22	Own	I	DI	6-6x6½	W	4	1103	.....	193-1200	177-1200	16.00	....	99	29.4	920- 600	‡5200	.....	V4	1.62- .500
43	*122	Own	I	DI	6-6x6½	W	4	1103	.....	221-1200	208-1200	16.00	....	114	36.1	920- 900	‡5300	.....	V4	1.62- .500
44	211, BAA-118	Own	I,M	DI	4-5¾x6½	W	4	675	.....	128-1400	118-1400	16.00	....	92	36.4‡	510-1000	‡4300	‡6850	V4	1.62- .500
45	*311, CAA-133	Own	I,M	DI	4-5¾x6½	W	4	675	.....	143-1400	133-1400	16.00	....	105	32.7‡	565-1000	‡4350	‡6825	V4	1.62- .500
46	212, BAB-128	Own	I,M	DI	4-6x6½	W	4	735	.....	138-1400	128-1400	16.00	....	92	33.6‡	567-1000	‡4300	‡6850	V4	1.62- .500
47	*312, CAB-144	Own	I,M	DI	4-6x6½	W	4	735	.....	154-1400	144-1400	16.00	....	104	30.2‡	635-1000	‡4350	‡6825	V4	1.62- .500
48	220, BBJ-157	Own	I,M	DI	6-5¼x6½	W	4	927	.....	169-1400	157-1400	16.00	....	88	33.1‡	685-1000	‡5200	‡8000	V4	1.37- .500
49	*320, CBJ-170	Own	I,M	DI	6-5¼x6½	W	4	927	.....	182-1400	170-1400	16.00	....	96	31.2‡	720-1000	‡5300	‡8285	V4	1.37- .500
50	221	Own	I	DI	6-5¾x6½	W	4	1013	.....	185-1400	173-1400	16.00	....	90	30.1	780-1000	‡5200	.....	V4	1.62- .500
51	*321	Own	I	DI	6-5¾x6½	W	4	1013	.....	210-1400	197-1400	16.00	....	103	26.9	850-1000	‡5300	.....	V4	1.62- .500
52	222	Own	I	DI	6-6x6½	W	4	1103	.....	204-1400	190-1400	16.00	....	84	27.4	835-1000	‡5200	.....	V4	1.62- .500
53	*322	Own	I	DI	6-6x6½	W	4	1103	.....	235-1400	220-1400	16.00	....	105	24.1	945-1000	‡5300	.....	V4	1.62- .500
54	*21G	.....	.....	.....	6-5¾x6½	W	...	1013	-1200	-1200	158-1200	.....	....	.....	29.7	690-1200	‡4700	.....	V4	.....
55	*22G	.....	.....	.....	6-6x6½	W	...	1103	-1200	193-1200	177-1200	.....	....	.....	26.6	760-1200	‡4700	.....	V4	.....
56	24	.....	.....	.....	6-6¾x6½	W	...	1245	-1200	213-1200	198-1200	.....	....	.....	23.7	860-1200	‡4700	.....	V4	.....
57	*124	.....	.....	.....	6-6¾x6½	W	...	1245	-1200	240-1200	226-1200	.....	....	.....	21.3	970-1200	‡4800	.....	V4	.....
58	*220G	.....	.....	.....	6-5¼x6½	W	...	927	-1400	169-1400	157-1400	.....	....	.....	29.9	570-1400	‡4700	.....	V4	.....
59	*221G	.....	.....	.....	6-5¾x6½	W	...	1013	-1400	185-1400	173-1400	.....	....	.....	27.2	640-1400	‡4700	.....	V4	.....
60	*222G	.....	.....	.....	6-6x6½	W	...	1103	-1400	204-1400	190-1400	.....	....	.....	24.8	700-1400	‡4700	.....	V4	.....
61	224	.....	.....	.....	6-6¾x6½	W	...	1245	-1400	230-1400	214-1400	.....	....	.....	21.9	790-1400	‡4700	.....	V4	.....
62	*324	.....	.....	.....	6-6¾x6½	W	...	1245	-1400	257-1400	241-1400	.....	....	.....	19.9	890-1400	‡4800	.....	V4	.....
63	*24G	.....	.....	.....	6-6¾x6½	W	...	1245	200-1200	213-1200	198-1200	.....	....	.....	23.7	1010- 600	4700	.....	V4	.....
64	*224G	.....	.....	.....	6-6¾x6½	W	...	1245	215-1400	230-1400	214-1400	.....	....	.....	21.9	910-1000	4700	.....	V4	.....
65	AAB-134	Own	M	DI	4-6x6½	W	4	735	.....	.....	134-1200	16.00	....	112	50.9	640- 950	.....	6825	V4	1.62- .500
66	BA-163	Own	M	DI	6-5¾x6½	W	4	1013	.....	.....	163-1200	16.00	....	98	49.1	825- 600	.....	8000	V4	1.62- .500
67	BB-179	Own	M	DI	6-6x6½	W	4	1103	.....	.....	179-1200	16.00	....	99	44.7	920- 600	.....	8000	V4	1.62- .500
68	ABA-184	Own	M	DI	6-5¾x6½	W	4	1013	.....	.....	184-1200	16.00	....	111	44.9	860- 850	.....	8265	V4	1.62- .500
69	BD-200	.....	M	.....	6-6¾x6½	W	...	1245	.....	.....	200-1200	.....	....	.....	.....	860-1200	.....	.....	V4	.....
70	ABB-205	Own	M	DI	6-6x6½	W	4	1103	.....	.....	205-1200	16.00	....	114	40.3	950- 900	.....	8265	V4	1.62- .500
71	ABD-227	.....	M	.....	6-6¾x6½	W	...	1245	.....	.....	227-1200	.....	....	.....	.....	970-1200	.....	.....	V4	.....
72	BBA-175	Own	M	DI	6-5¾x6½	W	4	1013	.....	.....	175-1400	16.00	....	90	45.6	760-1000	.....	8000	V4	1.62- .500
73	BBB-192	Own	M	DI	6-6x6½	W	4	1103	.....	.....	192-1400	16.00	....	94	41.6	835-1000	.....	8000	V4	1.62- .500
74	CBA-199	Own	M	DI	6-5¾x6½	W	4	1013	.....	.....	199-1400	16.00	....	103	41.5	850-1000	.....	8265	V4	1.62- .500
75	CBB-222	Own	M	DI	6-6x6½	W	4	1103	.....	.....	222-1400	16.00	....	105	37.2	945-1000	.....	8265	V4	1.62- .500
76	CBD-243	.....	M	.....	6-6¾x6½	W	...	1245	.....	.....	243-1400	.....	....	.....	.....	990-1400	.....	.....	V4	.....
77	Oliver Super 99D	Lanova	Tr	EC	6-4x4	D	4	302	.....	65-1675	55-1675	15.50	480	86	17.5	226-1200	981	.....	VI	1.38- .344
78	Super 166D	Lanova	I	EC	4-3½x3¾	W	4	144	.....	33-2000	28.1-1800	15.50	480	85	22.1	108-1500	620	.....	VI	1.25- .344
79	Super 177D	Lanova	I	EC	6-3½x3¾	W	4	216	.....	44-2000	39-1800	15.50	480	80	20.1	165-1200	784	.....	VI	1.25- .344
80	Super 188D	Lanova	I	EC	6-3¾x4	W	4	265	.....	54-2000	48-1800	15.50	480	88	19.1	205-1250	916	.....	VI	1.38- .344
81	Super 199D	Lanova	I	EC	6-4x4	D	4	302	.....	66-2000	57-1800	15.50	480	86	17.2	226-1200	981	.....	VI	1.38- .344

For abbreviations, see pages 228 and 229

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ENGINES—*continued*

VALVES		PISTON				PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM								STARTING METHOD		OVERALL DIMENSIONS				
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked In—	Materials (S. A. E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)	Air Cleaner—Make	Fuel Filter—Make	Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)	Clutch Housing (S.A.E. Numbers)	Line Number
1.25-.395	Alu	4.84	4.47	3	2	1.50-3.62	F	CNM	8.50	7.00	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	55⅛ (2)	39⅞	17¾	1,3	1
1.37-.395	Alu	6.84	7.08	4	2	1.62-3.75	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	46⅞ (2)	25½	38⅜	1,2	2
1.37-.395	Alu	6.84	8.90	4	2	1.62-3.84	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650				Ele	46⅞	25½	38⅜	1,2	3
1.37-.395	AA	6.84	8.90	4	2	1.62-3.84	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650			LDA	AE	49⅞	27½	42⅛		4
1.37-.395	Alu	6.84	7.93	4	2	1.62-3.93	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	46⅛ (2)	25½	38⅜	1,2	5
1.62-.500	Alu	7.53	9.94	4	2	2.00-4.18	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅛ (2)	30⅛	46⅛	0,1	6
1.62-.500	Alu	7.53	11.69	4	2	2.00-4.42	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅛ (2)	30⅛	46⅛	0,1	7
1.62-.500	Alu	7.53	12.37	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅛ (2)	30⅛	46⅛	0,1	8
1.62-.500	Alu	7.53	12.34	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅛ (2)	30⅛	46⅛	0,1	9
1.91-.500	Alu	7.53	12.34	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	73⅛	30⅛	46		10
1.90-.500	Alu	7.53	12.60	4	2	2.00-4.90	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅛ (2)	30	47⅛	0,1	11
1.62-.500	Alu	7.53	12.34	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅛ (2)	46⅛	31⅝	0,1	12
2.12-.500	Alu	7.53	12.90	4	2	2.00-5.40	F	CNM	13.25		5	4.50	AB	AB	C	Pi	2000			LD	AEG	56⅜ (2)	42	55¼	0,1	13
2.12-.500	Alu	7.53	12.90	4	2	2.00-5.40	F	CNM	13.25		5	4.50	AB	AB	C	Pi	2000			LD	AEG	76 (2)	42	55¼	0,1	14
1.37-.372	Lyn	4.87	2.83	3	2	1.50-2.72	F	4140	13.25	7.3	3	2.93	AB	A-E	C	Pi	1800	Uni	Fra	AL	E-H	35	26	40	1	15
1.37-.372	Lyn	4.87	2.83	3	2	1.50-2.72	F	4140	13.25	7.3	5	2.93	AB	A-E	C	Pi	1800	Uni	Fra	AL	Ele	47½	25	40	1	16
1.37-.372	Lyn	4.87	2.83	3	2	1.50-2.72	F	4140	13.25	7.3	7	2.93	AB	A-E	C	Pi	1800	Uni	Fra	AL	Ele	58	27	45	1	17
1.37-.372	Lyn	4.87	3.25	3	2	1.50-2.96	F	4140	13.25	7.3	5	2.93	AB	AB	C	Pi	1800	Uni	Fra	AL	Ele	47½	25	40	1	18
1.37-.372	Lyn	4.87	3.25	3	2	1.50-2.96	F	4140	13.25	7.3	7	2.93	AB	AB	C	Pi	1800	Uni	Fra	AL	Ele	58	27	45	1	19
1.37-.372	Lyn	4.87	4.81	3	2	1.50-3.46	F	4140	13.25	7.3	7	2.93	AB	AB	C	Pi	1800	Uni	Fra	AL	Ele	58	27	45	1	20
1.31-.500	AA	5.70	4.91	3	2	1.31-3.25	F	1040	10.00	7.48	5	3.75	Own	Own	C	Si	700	Don	Pur	Own	GS	38½	24½	46¼	2	21
1.47-.500	AA	6.44	6.64	3	2	1.50-3.71	F	1040	11.00	8.88	5	4.13	Own	Own	C	Si	700	Don	Pur	Own	GS	41½	24⅞	53⅛	1	22
1.53-.532	AA	6.19	7.36	4	2	1.62-4.09	F	1040	13.25	12.06	5	3.25	Own	Own	C	Si	700	Don	Pur	Own	GS	47⅛	28¼	54⅝	1	23
1.41-.532	AA	6.44	6.75	3	2	1.50-3.71	F	1040	11.00	8.88	7	3.56	Own	Own	C	Si	700	Don	Pur	Own	GS	56¼	30¼	55⅞	1	24
1.53-.532	AA	6.19	7.53	4	2	1.62-4.10	F	1040	13.25	12.06	7	3.50	Own	Own	C	Si	700	Don	Pur	Own	GS	60⅛	31⅞	59	0	25
1.88-.625	AA	7.50	12.79	3	2	1.88-5.00	F	1040	13.25	15.81	7	4.12	Own	Own	C	Si	700	Don	Pur	Own	GS	71⅛	32¼	81⅝	0	26
1.69-.563	AA	5.64	7.07	3	2	1.63-4.22	F	4130	11.25	7.75	7	4.00	AB	AB	C	Mu	2300	Vor	Pur	LDI	A-EI	53½	28½*	46¼	1	27
1.69-.563	AA	5.64	7.07	3	2	1.63-4.22	F	4130	11.25	7.75	7	4.00	AB	AB	C	Mu	2300	Pur	Pur	LDI	A-EI	53½	34*	46½		28
1.38-.495	AA	5.08	4.72	3	2	1.50-3.62	F	1041	10.00	6.96	3	2.91	AB	AB	C	Pi	1800	Uni	Own	DR	Ele	42¾	24⅞	40⅝	2	29
1.38-.495	AA	5.08	4.72	3	2	1.50-3.62	F	1041	10.00	6.96	4	2.91	AB	AB	C	Pi	1800	Uni	Own	DR	Ele	57	24⅝	42⅝	2	30
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	31
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	32
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	33
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	34
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	35
1.37-.500	CI	7.75	19.7	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	60⅛	00	36
							F				7	4.00	Own	Own							Ele	75⅛	37	77⅛		37
1.37-.500	CI	7.75	19.7	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	75⅛	37	84½	00	38
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	80⅛	00	39
							F				7	4.00	Own	Own							Ele	75⅛	37	77⅛		40
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	84½	00	41
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	77⅛	00	42
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	84½	00	43
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	44
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	45
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	46
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	47
1.37-.500	CI	7.75	19.7	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60⅛	0	48
1.37-.500	CI	7.75	19.7	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	84½	0	49
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60⅛	0	50
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	84½	0	51
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60⅛	0	52
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	84½	0	53
											7	4.00									Ele	75⅛	37	77⅛		54
											7	4.00									Ele	75⅛	37	77⅛		55
											7	4.00									Ele	76⅛	37	84¼		56
											7	4.00									Ele	76⅛	37			57
											7	4.00									Ele	77⅛	37			58
											7	4.00									Ele	77⅛	37			59
											7	4.00									Ele	77⅛	37			60
											7	4.00									Ele	77⅛	37	84¼		61
											7	4.00									Ele	77⅛	37			62
							F	DFS			7	4.00									Ele	77⅛	38	63		63
							F	DFS			7	4.00									Ele	77⅛	38	63		64
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58½	29½	62⅞	0	65
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76½	37	60½	00	66
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76½	37	77⅛	00	67
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76½	37	84½	00	68
											7	4.00									Ele	76½	37	84¼		69
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76½	37	84½	00	70
											7	4.00									Ele	76½	37			71
1.62-.500	CI	7.75	23.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60½	0	72
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60½	0	73
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	84½	0	74
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	84½	0	75
											7	4.00									Ele	77⅛	37			76
1.18-.344	AA	4.44		3	1	1.25-3.44	F	1045	6.75	3.75	4	2.63	AB	AB	C	Pi	1750	Don	Fra	DR	Ele	41	21¼	33⅞		77
1.13-.344	AA	3.75	2.25	3	1	1.25-2.75	F	1045	6.75	2.69	3	2.25	AB	AB	C	Pi	1750	Don	Fra	DR	Ele	31⅛	22	34½	4	78
1.13-.344	AA	3.75	3.25	3	1	1.25-2.75	F	1045	6.75	2.69	4	2.25	AB	AB	C	Pi	1750	Don	Fra	DR	Ele	40⅛	22	33½	4	79
1.18-.344	AA	4.19	5.44	3	1	1.25-3.00	F	1045	6.75	2.94	4	2.63	AB	AB	C	Pi	1750	Don	Fra	DR	Ele	41⅛	22	34⅞	3	80
1.18-.344	AA	4.44		3	1	1.25-3.44	F	1045	6.75	3.75	4	2.63	AB	AB	C	Pi	1750	Don	Fra	DR	Ele	43⅛	22	34½	3	81

For abbreviations, see pages 228 and 229

For Directory of the Engine Manufacturers listed above, see Table of Contents

1957 AUTOMOTIVE DIESEL

Line Number	ENGINE MAKE AND MODEL	Built Under License from	GENERAL: Designed for	Type	Number of Cylinders Bore and Stroke (In.)	Cylinder Liners—Type	Cycle	Piston Displacement (Cu. In.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittent Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	VALVES: Arrangement	VALVES: Intake Port Diameter and Lift (In.)
	Oliver—Continued																			
1	Super 55D	Lanova	Tr	EC	4-3½x3¾	W	4	144	.....	37-2000	31.5-2000	15.50	.....	87	16.4	106-1500	516	.....	VI	1.17-.360
2	Super 66D	Lanova	Tr	EC	4-3½x3¾	W	4	144	.....	37-2000	31.5-2000	15.50	.....	87	16.1	106-1500	508	.....	VI	1.17-.360
3	Super 77D	Lanova	Tr	EC	6-3½x3¾	W	4	216	.....	48-1600	40.8-1600	15.50	.....	94	15.9	168-1200	652	.....	VI	1.17-.313
4	Super 88D	Lanova	Tr	EC	6-3¾x4	W	4	265	.....	58.5-1600	49.7-1600	15.50	.....	93	14.5	203-1200	720	.....	VI	1.37-.344
5	Onan DSP	.....	I	PC	1-3½x3½	N	4	33.7	.....	5.79-2000	5.5-1800	17.30	.....	66	67.3	14.7-1800	370	.....	I	1.31-.271
6	DRP	.....	I	PC	2-3½x3½	N	4	67.3	.....	14.8-2400	11-1800	17.30	.....	77	49.4	34.2-2100	543	.....	I	1.31-.271
7	P&H 287C-18A	.....	T,B,Tr,M,R,I	DI	2-4½x5½	W	2	174	95-1800	82-1800	66-1800	16.00	1200	73	14.8♣	279-1200	975	1635	VI	No Valves
8	387C-18A	.....	T,B,Tr,M,R,I	DI	3-4½x5½	W	2	261	144-1800	128-1800	103-1830	16.00	1200	75	11.6♣	425-1300	1190	2120	VI	No Valves
9	487C-18A	.....	T,B,Tr,M,R,I	DI	4-4½x5½	W	2	348	200-1800	180-1830	144-1830	16.00	1200	80	10.4♣	600-1350	1500	2530	VI	No Valves
10	687C-18A	.....	T,B,Tr,M,R,I	DI	6-4½x5½	W	2	522	280-1800	255-1800	205-1800	16.00	1200	75	8.9♣	825-1300	1820	3000	VI	No Valves
11	Red Wing D4-45	Wau	M	TC	4-3½x3¾	W	4	144	45-2400	40-2400	32-2000	17.00	850	88	45.8	93-1400	.....	1460	VI	1.25-.312
12	D6-100	Wau	M	TC	6-4x4	D	4	302	100-2600	90-2400	80-2000	17.00	750	105	.....	.....	.....	.....	VI	1.38-.344
13	D6-140	Wau	M	TC	6-4¼x5	D	4	426	140-2400	120-2200	100-2000	17.00	.....	93	.....	.....	.....	.....	.....	1.75-.451
14	D6-160	.....	M	TC	6-5¼x6	W	4	779	168-2000	138-2000	102-1400	17.50	750	80	42.2	600-1000	.....	4310	VI	2.25-.560
15	D6-200	.....	M	TC	6-6½x6½	W	4	1197	225-1600	185-1600	152-1300	16.50	750	83	42.2	845-1000	.....	4310	VI	2.37-.656
16	Scripps 7000-1, 2, 3	.....	M	TC	4-4½x4½	D	4	255	79-2600	68-2600	53-1800	15.00	750	91	23.6	185-1400	.....	1485	VI	2.37-.728
17	8500-1, 2, 3	.....	M	TC	6-3¾x4½	D	4	298	94-2800	71-2630	59-1800	15.00	750	88	25.2	208-1500	.....	1485	VI	1.62-.375
18	Sheppard 17-A	.....	Tr,M,I	PC	2-3½x4	W	4	76.8	20-2000	15-1800	13.5-1800	22.0	.....	77	35.1♣	60-1800	474	490	VI	1.44-.209
19	19	.....	M,I	PC	4-3½x4	W	4	154	42-2000	31-1800	28-1800	22.0	.....	80	26.8♣	80-1800	750	770	VI	1.44-.209
20	19	.....	Tr,M,I	PC	4-4½x5	W	4	319	73.5-1800	56-1800	51.5-1800	22.0	.....	80	29.0	190-1075	1500	.....	VI	1.56-.....
21	Sterling VD6	.....	M,R,I	DI	6-8x9	W	4	2714	.....	330-1200	325-1200	14.00	1000	80	28.2♣	1685-1000	9160	8850	VI	2.37-.728
22	VDS6S	.....	M,R,I	DI	6-8x9	W	4	2714	750-1200†	660-1200	563-1200	11.35	1340	137	17.4♣	.....	9775	12770	VI	2.37-.728
23	VDS8S	.....	M,R,I	DI	8-8x9	W	4	3619	1000-1200†	850-1200	750-1200	11.35	1340	137	16.2♣	3310-1000	12100	17000	VI	2.37-.728
24	Superior 40-6	.....	M,I	DI	6-8½x10½	W	4	3573	.....	.....	425-1000	12.20	800	80	44.5♣	.....	14500	16000	VI	3.12-.875
25	40-X-6	.....	M,I	DI	6-8½x10½	W	4	3575	.....	.....	700-1000	12.20	900	120	31.6♣	.....	15500	17000	VI	3.12-.775
26	40L	.....	R	DI	6-8½x10½	W	4	3575	.....	.....	375-1100	12.00	800	75	50.6	.....	19000	.....	V4	3.06-.697
27	40LX	.....	R	DI	6-8½x10½	W	4	3575	.....	.....	500-1100	12.00	860	102	46.0	.....	23000	.....	V4	3.06-.620
28	40ALX	.....	R	DI	6-8½x10½	W	4	3575	.....	.....	675-1100	12.00	1200	136	34.1	.....	23000	.....	V4	3.06-.620
29	40C-LX-6	.....			6-8½x10½	W	4	3575	.....	.....	675-1100	.....	.....	136	22.4	.....	15100	.....	VI	3.63-.....
30	40C-LX-8	.....	M,R,I	DI	8-	W	4	4767	.....	.....	900-1100	.....	.....	136	20.5	.....	18410	.....	VI	3.63-.....
31	40-SX-8	.....	M,I	DI	8-8½x10½	W	4	4767	.....	.....	900-1000	.....	.....	156	22.2♣	.....	20000	19500	VI	3.94-.....
32	Waukesha 100-DLC	.....	T,Tr,I	TC	4-3½x3¾	W	4	144	45-2400	32-2200	26-2000	17.00	750	71	18.3	102-1800	475	.....	VI	1.25-.312
33	165-DLC	.....	T,Tr,I	TC	4-3½x3¾	W	4	216	60-2400	54-2400	44-2000	17.00	750	69	18.1	152-1000	800	.....	VI	1.25-.312
34	190-DLCA	.....	T,Tr,I	TC	6-3¾x4	W	4	265	84-2800	64-2200	46-2000	17.00	750	69	16.9	191-1400	868	.....	VI	1.37-.349
35	195-DLCA	.....	T,Tr,I	TC	6-4x4	D	4	302	96-2800	83-2200	62-2000	17.00	750	81	15.6	221-1800	965	.....	VI	1.56-.344
36	135-DKB	.....	T,B,Tr	TC	6-4¼x5	D	4	426	147-2800	104-2000	85-1800	17.50	750	86	16.3	329-1600	1386	.....	VI	-.438
37	*135-DKBS	.....	T,B,Tr	TC	6-4¼x5	D	4	426	185-2800	.....	.....	17.50	750	.....	.....	400-1800	1488	.....	VI	1.75-.438
38	148-DKB	.....	T,B	TC	6-5¼x6	W	4	779	200-2150	160-2100	147-1800	17.50	750	79	16.4	584-1000	2320	.....	VI	2.25-.477
39	*148-DKBS	.....	T,B	TC	6-5¼x6	W	4	779	280-2100	.....	.....	17.50	750	.....	.....	706-1800	2445	.....	VI	2.25-.477
40	WAKDB	.....	T,I	TC	6-6¼x6½	W	4	1197	224-1600	191-1800	167-1600	16.50	750	89	22.8	840-1000	3800	.....	VI	2.37-.656
41	*WAKDBS	.....	T,I	TC	6-6¼x6½	W	4	1197	352-1800	296-1800	244-1600	16.50	750	101	16.1	1062-1600	3925	.....	VI	2.37-.656
42	NKDB	.....	I	TC	6-7x8¼	W	4	1905	297-1200	267-1200	215-1050	17.00	750	76	43.6	1383-600	9285	.....	VI	2.87-.709
43	*NKDBS	.....	I	TC	6-7x8¼	W	4	1905	390-1200	351-1200	312-1200	17.00	750	99	30.2	1730-1000	9435	.....	VI	2.87-.709
44	LRDB	.....	I	TC	6-8½x8½	W	4	2894	415-1200	374-1200	300-1000	15.00	750	77	34.3	2160-600	10300	.....	VI	3.25-.704
45	*LRDBS	.....	I	TC	6-8½x8½	W	4	2894	570-1200	513-1200	388-1000	15.00	750	100	26.9	2545-1000	10450	.....	VI	3.25-.704
46	VLRDB	.....	I	TC	12-8½x8½	W	4	5788	830-1200	797-1200	797-1200	17.00	.....	92	19.5	4330-600	15500	.....	VI	3.25-.....
47	*VLRDBS	.....	I	TC	12-8½x8½	W	4	5788	1135-1200	1091-1200	1091-1200	17.00	.....	80	14.9	5070-900	16300	.....	VI	3.25-.....
48	Witte AD	.....	I	PC	1-3¼x4½	W	4	37.3	4.8-1200	4.12-1200	3.75-1200	18.00	700	71	211	21-1200	798	.....	VI	1.31-.320
49	BD	.....	I	PC	1-4¼x6	W	4	85.1	10-900	8.5-900	7.75-900	16.50	700	82	173	56-900	1320	.....	VI	1.56-.406
50	CD	.....	I	PC	1-5x8	W	4	157	15.5-750	13.75-750	12.5-750	16.70	700	84	149	109-750	1980	.....	VI	2.13-.531
51	100	.....	Tr,M,R,I	PC	2-4x4	W	4	101	25.2-1800	.....	18-1800	18.50	800	83	47.2	73-1800	850	.....	HI	1.56-.332

ABBREVIATIONS

*—Without fan or muffler.
♣—Based on automotive or industrial weight.
°—Supercharged.
•—Bottom of gear box to top of heat exchanger.
‡—Including base.
♦—Includes radiator.
"—146-2000 for buses.
†—With all accessories.
♠—Includes reverse and reduction gear.
‡‡—Bottom of base to highest point on engine.
^—Modified.
▲—Dual fuel engine; diesel oil or natural gas.
▫—Based on standard truck engine.

††—Air cooled.
(1)—Other models available in 1 and 2 cyl. with max. inter. hp. of 11 and 22.
(2)—Fan to flywheel housing.
(3)—Other models available in 4, 6 and 12 cyl. with max. inter. hp. of 72, 110 and 220.
(4)—To engine center line.
(5)—All models are available with governed speed of 1400 RPM.
(12)—From bottom of pan to air cleaner mounting flange.
(15)—Including radiator and gearbox.
A—Air.
AA—Aluminum Alloy.
AB—American Bosch.
AC—AC Spark Plug Co.
ACB—AC or Bosch.
Ach—Air chamber.

AE—Air or electric.
A-E—American Bosch or Ex-Cell-O Corp.
AEG—Air, electric or auxiliary gasoline engine.
A-El—Air or Electric.
Al—Auto-Lite (electric), Ingersoll-Rand (air).
AL—Electric Auto-Lite Co.
Alu—Aluminum.
AM—Air-Mase Corp.
AR—Airtex.
A-R—American Bosch or Roosa Master.
AS—Air-swirl, direct injection.
AT—Arma Steel, tin plated.
B—Buses.
BB—Bendix or Bosch.
B-D—Bosch or Demco.
B-F—Bosch and Fram.

BFC—Bosch, Fram and Cuno.
B-K—Bosch or Knecht.
BS—Bosch or Scintilla.
Bur—Burgess.
C—Closed.
Cb—Commercial and Bosch.
CB—Cuno and Bosch.
CBR—C.A.V., Bosch or Roosa.
C-F—Cuno and Fram.
CI—Cast Iron.
CMS—Chrome moly steel.
CNM—Chrome-nickel molybdenum.
Com—Commercial Filters Corp.
Cont—Continental Motors Corp.
Cun—Cuno Engineering Corp.
D—Dry liners used.
DA—Delco-Remy and Auto-Lite.
DeL—DeLuxe Products Corp.
Dem—Demco.
DFS—Drop forged steel.

For Directory of the Engine Manufacturers listed above, see Table of Contents

ENGINES—*concluded*

VALVES		PISTON					PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM					AIR CLEANER—Make	FUEL FILTER—Make	STARTING METHOD		OVERALL DIMENSIONS			CLUTCH HOUSING (S.A.E. Numbers)	LINE NUMBER
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked In—	Materials (S. A. E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)				Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)		
1.05– .360	AA	3.75	.....	3	1	1.25–2.75	F	1045	6.75	2.69	3	2.25	AB	AB	C	Pi	1750	Don	F-A	DR	Ele	30 7/16	18 1/2	32 1/16	.....	1
1.05– .360	AA	3.75	.....	3	1	1.25–2.75	F	1045	6.75	2.69	3	2.25	AB	AB	C	Pi	1750	Don	F-A	DR	Ele	30 7/16	18 1/2	30 1/16	.....	2
1.05– .281	AA	3.75	.....	3	1	1.25–2.75	F	1045	6.75	2.69	4	2.25	AB	AB	C	Pi	1750	Don	F-A	DR	Ele	39 7/16	18 1/2	31 1/16	.....	3
1.03– .344	AA	4.19	.....	3	1	1.25–3.00	F	1045	6.75	2.94	4	2.63	AB	AB	C	Pi	1750	Don	F-A	DR	Ele	41 1/2	18 1/2	33 3/4	.....	4
1.22– .265	Van	4.13	2.25	3	2	1.25–3.25	F	1040	6.13	2.61	2	2.75	Dem	Dem	C	Pi	1800	Don	Fra	Own	Ha	22 5/16	21 5/16	31 7/16	.....	5
1.22– .265	Van	4.13	2.25	3	2	1.25–3.25	F	1040	6.13	2.61	2	2.75	Dem	Dem	C	Pi	1800	Don	Fra	AL	Ele	23	30 1/16	27	.....	6
2.30– .550	AA	6.35	7.13	4	2	1.75–3.88	F	1141	11.88	7.88	3	4.00	BB	B-D	C	Si	2200	D-M	Ff	Al	A-El	34 1/16	28 1/16	40 7/16	1	7
2.30– .550	AA	6.35	7.13	4	2	1.75–3.88	F	1141	11.88	7.88	4	4.00	BB	B-D	C	Si	2200	D-M	Ff	Al	A-El	43 1/16	28 1/16	42 1/16	1	8
2.30– .550	AA	6.35	7.13	4	2	1.75–3.88	F	1141	11.88	7.88	5	4.00	BB	B-D	C	Si	2200	D-M	Ff	Al	A-El	45 5/16	28 1/16	42 1/16	1	9
2.30– .550	AA	6.35	7.13	4	2	1.75–3.88	F	1141	11.88	7.88	7	4.00	BB	B-D	C	Si	2200	D-M	Ff	Al	A-El	59 1/16	28 1/16	42 1/16	1	10
1.00– .281	CI	4.75	3.28	3	2	1.25–2.75	F	1045	6.75	1.97	3	2.25	AB	AB	C	Pi	1800	Opt	Opt	DR	Ele	42 7/16	24 5/16	29 5/16	2	11
1.18– .344	AA	4.18	2.75	3	2	1.25–3.44	F	1045	6.75	4.00	4	2.63	AB	.....	.....	SP	1800	N	B-F	DR	Ele	59 1/16	26	32	.....	12
1.50– .375	AA	4.94	4.30	3	1	1.50–3.63	F	1045	9.50	5.75	7	3.25	AB	.....	.....	.....	1800	.....	B-F	DR	Ele	62	24 1/2	35	.....	13
1.81– .531	Alu	7.25	.....	4	2	1.87–4.50	F	4145	11.75	.....	7	4.25	AB	AB	C	Pi	2000	Opt	Com	DR	Ele	74 5/16	32 1/16	47 1/16	0	14
2.00– .656	Alu	.....	.....	3	2	2.18–5.37	F	4145	16.25	.....	7	4.75	AB	AB	C	Pi	2000	Opt	Com	DR	Ele	88 1/16	34 5/16	51 1/16	0	15
1.12– .375	Alu	4.84	4.47	4	2	1.18–3.70	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650	AC	Pur	DR	Ele	46 5/16	24 1/16	32 1/16	4	16
1.12– .375	Alu	4.84	3.56	4	2	1.18–3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650	AC	Pur	DR	Ele	53 1/16	24 1/16	32 1/16	4	17
1.44– .209	CI	3.81	2.26	3	2	1.06–2.93	F	Fg	8.00	2.30	3	2.25	Own	Own	O	Si	3	AM	Fra	AL	E-H	22 1/16	16 11/16	26	.....	18
1.44– .209	CI	3.81	2.26	3	2	1.06–2.93	F	Fg	8.00	2.30	5	2.25	Own	Own	O	Si	3	AM	Fra	AL	E-H	32 5/16	16 11/16	26	.....	19
1.56–	CI	5.48	.....	3	2	1.50–3.75	F	Fg	10.88	.....	5	3.19	Own	Own	O	Si	3	AM	Fra	AL	Ele	40 1/2	20 11/16	38 1/16	.....	20
2.37– .728	Alu	10.25	30.59	4	2	3.00–6.93	F	4340	18.00	46.05	7	6.00	BB	BB	C	Mu	3000	Opt	Cun	LN	A-El	.....	.....	.....	00	21
2.37– .728	AA	9.62	26.25	4	1	3.00–6.93	F	4340	18.00	46.05	7	6.00	AB	AB	C	Mu	3300	AM	Cun	LN	Ele	114 1/4	39 1/4	64	00	22
2.37– .728	AA	9.62	26.25	4	1	3.00–6.93	F	4340	18.00	46.05	9	6.00	AB	AB	C	Mu	3300	AM	Cun	LN	Ele	134 1/2	39 1/4	64	00	23
3.12– .875	CI	13.69	86.20	4	3	3.50–7.00	F	1045	21.00	75.00	7	6.00	B-D	B-D	C	Mu	2500	AM	Pur	Own	A	112	40	70	.....	24
3.12– .775	CI	13.69	86.20	4	3	3.50–7.00	F	1045	21.00	75.00	7	6.00	B-D	B-D	C	Mu	3300	AM	Pur	Own	A	148	48	70	.....	25
3.06– .697	CI	11.72	73.10	4	3	3.50–7.00	F	1045	21.00	67.10	7	6.00	BB	BB	C	Mu	3000	AM	Pur	Opt	Ele	129	56	74	.....	26
3.06– .620	CI	11.72	73.10	4	3	3.50–7.00	F	1045	21.00	67.10	7	6.00	BB	BB	C	Mu	3500	AM	Pur	Opt	Ele	143	56	74	.....	27
3.06– .620	CI	11.72	73.10	4	3	3.50–7.00	F	1045	21.00	67.10	7	6.00	BB	BB	C	Mu	3500	AM	Pur	Opt	Ele	148	56	74	.....	28
3.38–	CI	12.30	.....	4	2	3.50–3.50	F	.....	.....	.....	6	5.75	BB	.....	.....	.....	.....	AM	Pur	Own	A	154 7/16	57	89 1/16	.....	29
3.38–	CI	12.30	.....	4	2	3.50–3.50	F	.....	.....	.....	8	5.75	BB	.....	.....	.....	.....	AM	Pur	Own	A	188 11/16	59 1/16	83 11/16	.....	30
3.06–	CI	12.50	.....	4	2	3.50–7.00	F	1045	21.00	.....	9	6.00	BB	BB	C	Mu	.....	AM	Pur	Own	A	128 1/2	47 3/4	70	.....	31
1.00– .281	AA	4.75	.....	3	2	1.25–2.75	F	1045	6.75	.....	3	2.25	AB	AB	C	Pi	1800	Opt	Opt	Opt	Ele	30 1/16	19	27 3/4	4	32
1.00– .281	AA	4.18	.....	3	2	1.25–2.75	F	1045	6.75	.....	4	2.25	AB	AB	C	Pi	1800	Opt	Opt	Opt	Ele	40 9/16	22	29	3	33
1.12– .349	AA	4.18	.....	3	2	1.25–3.00	F	1045	6.75	.....	4	2.63	AB	AB	C	Pi	1500	Opt	Opt	Opt	Ele	42 5/16	22	29	3	34
1.37– .344	AA	4.43	.....	3	2	1.25–3.43	F	1045	6.75	.....	4	2.63	AB	AB	C	Pi	1500	Opt	Opt	Opt	Ele	43	25 3/4	30	3	35
1.50– .375	AA	4.94	.....	3	1	1.50–3.62	F	1045	9.50	.....	7	3.25	AB	AB	C	Pi	1800	Opt	Opt	Opt	Ele	47 1/16	26	34 1/2	3	36
1.50– .375	AA	4.94	.....	3	1	1.50–3.62	F	1045	9.50	.....	7	3.25	AB	AB	C	Pi	1800	Opt	Opt	Opt	Ele	47 1/16	26	41 1/2	3	37
1.81– .507	AA	7.25	.....	4	2	1.87–4.50	F	4145	11.75	.....	7	4.50	AB	AB	C	Pi	2000	Opt	Opt	DRW	E-G	55 1/16	28 1/2	47 1/2	0,1	38
1.81– .507	AA	7.25	.....	4	2	1.87–4.50	F	4145	11.75	.....	7	4.50	AB	AB	C	Pi	2000	Opt	Opt	DRW	E-G	55 1/16	28 1/2	55 1/4	0,1	39
2.00– .656	AA	8.37	.....	2	2	2.18–5.37	F	4145	13.25	.....	7	4.75	AB	AB	C	Pi	2000	Opt	Opt	DRW	E-G	66 5/16	33	50 7/16	0	40
2.00– .656	AA	8.37	.....	4	2	2.18–5.37	F	4145	13.25	.....	7	4.75	AB	AB	C	Pi	2000	Opt	Opt	DRW	E-G	66 5/16	33	62 1/2	0	41
2.50– .709	AA	9.75	.....	2	2	2.50–6.03	F	4145	15.38	.....	7	5.25	AB	AB	C	Pi	2000	Opt	Opt	Own	G	78 1/16	48	60 1/4	00	42
2.50– .709	AA	9.75	.....	4	2	2.50–6.03	F	4145	15.38	.....	7	5.25	AB	AB	C	Pi	2000	Opt	Opt	Own	G	78 1/16	48	60 1/4	00	43
2.75– .704	AA	11.34	.....	4	1	3.00–7.00	F	4145	21.38	.....	7	5.50	AB	AB	C	Pi	2000	Opt	Opt	Own	G	97 1/2	49 1/16	69 5/8	00	44
2.75– .704	AA	11.34	.....	4	2	3.00–7.00	F	4145	21.38	.....	7	5.50	AB	AB	C	Pi	2000	Opt	Opt	Own	G	113 1/2	49 1/16	69 5/8	0	45
2.75–	AA	.....	.....	4	2	3.00–7.00	F	4145	18.00	.....	7	6.25	AB	.....	.....	Pi	.....	.....	.....	Own	G	130	67	75 1/2	.....	46
2.75–	AA	.....	.....	4	2	3.00–7.00	F	4145	18.00	.....	7	6.25	AB	.....	.....	Pi	.....	.....	.....	Own	G	130	67	75 1/2	.....	47
1.19– .320	AA	4.44	2.25	4	1	1.25–2.72	F	1045	8.50	3.23	2	TR	AB	AB	C	Pi	1900	Uni	AR	AL	E-H	30 5/16	23 3/4	38	.....	48
1.56– .406	CI	7.31	9.15	4	1	1.75–3.50	F	1045	15.00	6.80	2	TR	AB	AB	C	Pi	1600	Uni	AR	AL	E-H	45 1/16	38 1/16	41 1/2	.....	49
1.88– .531	CI	8.19	14.73	4	2	1.61–4.22	F	1045	18.00	16.73	2	TR	AB	AB	C	Pi	1900	Uni	AR	AL	E-H	53 11/16	48 1/16	48 11/16	.....	50
1.56– .332	AA	4.75	3.50	4	1	1.44–3.38	F	1035	8.00	4.80	2	3.00	RM	.....	.....	Pi	1800	Vor	Com	DR	Ele	38 1/2	39	25	.....	51

DI—Direct injection.
D-M—Donaldson or Air Maze.
D-N—Delco-Remy or Novo.
Don—Donaldson Co.
DR—Delco-Remy Div.
DRW—Delco or Waukesha.
EAH—Air, Electric, or Hand.
EC—Energy cell.
E-G—Electric or auxiliary gasoline engine.
E-H—Electric or hand.
Ele—Electric.
F—Floating.
F-A—Fram or American Bosch.
Ff—Fulflo.
Fg—Forging.
Fra—Fram Corp.
G—Auxiliary gasoline engine.
GS—Gasoline and spark ignition.
Ha—Hand.
Hes—Hesselman.
I—Industrial.
HI—Horizontally In-head.
LB—Leece Neville or Buda.
L-D—Leece Neville or Delco Remy.
LDA—Leece-Neville, Delco-Remy or Autolite.
LDI—Leece-Neville, Delco-Remy or Ingersoll Rand.
LN—Leece Neville Co.
Lyn—Lynite.
M—Marine.
MH—Mann and Hummel.
Mic—Michiana Products Corp.
MW—Marine Work Boat.
N—No or None.
Mu—Multiple.
O—Open.
O-D—Own or Delco-Remy.
Opt—Optional.
PC—Precombustion chamber.
Pi—Pintle.
P-S—Purolator or Stewart-Warner.
Pur—Purolator Products, Inc.
R—Railcars.
RB—Roller bearings.
RM—Roosa-Master.
s—Shaft horsepower.
Sc—Scintilla Magneto Div.
SC—Swirl chamber.
Sh—Shaft torque; Shaft RPM.
Si—Single.
SP—Single and pintle.
T—Trucks.
TC—Turbulence chamber.
Tr—Tractors.
TR—Tapered roller bearings.
Uni—United Air Cleaner Div.
VI—Vertically In-Head.
V2—Vertically in-head, 2 inlets used.
V4—Vertically in-head, 2 exhaus and 2 intake valves per cylinder.
Van—Vanasil.
Var—Various.
Vor—Vortex.
Vwg—Varies with gear.
W—Wet liners used.
Wau—Waukesha.
W-L—WGB Oil Clarifier or Luberfiner.
WP—Winslow or Purolator.
Win—Winslow Filter.
WIP—Wix or Purolator.

For Directory of the Engine Manufacturers listed above, see Table of Contents

GASOLINE ENGINES — 1957

SMALL

MAKE AND MODEL	Designed for Use	Number of Cycles	ENGINE: Type	No. of Cylinders	Bore and Stroke (In.)	Total Displacement (Cu. In.)	Compression Ratio (to —1)	Valve Location	Horsepower: Rated at RPM	Horsepower: Continuous at RPM	Torque—Lb. Ft. at RPM	Weight (Lb.)	GOV-ERNOR: Used	GOV-ERNOR: Type	Ignition System Type	FUEL SYSTEM: Type	FUEL SYSTEM: Make	Fuel Used	Starting Method
AIR COOLED																			
Briggs & Stratton 5S	General Purpose	4	Ver	1	2x1½	4.71	5.29	L	1.00-3200	.85-3200	1.60-3200	30	Y	Av	Mag	MV	Own	G	Rr
..... 6	General Purpose	4	Ver	1	2x2	6.28	5.86	L	2.00-3600	1.70-3600	2.90-3600	34	Y	MA	Mag	Car	Own	G	Rr
..... 6B	General Purpose	4	Ver	1	2¼x1½	6.30	5.90	L	2.25-3600	1.90-3600	3.29-3600	23	Y	Av	Mag	Car	Own	G	Rr
..... 6B-H	Lawn Mowers	4	Hor	1	2¼x1½	6.30	5.90	L	2.25-3600	1.70-3600	2.92-3600	19¼	Y	Av	Mag	Car	Own	G	Rr
..... 6B-HS	Lawn Mowers	4	Hor	1	2¼x1½	6.30	5.90	L	1.75-3200	1.36-3200	2.62-3200	18½	Y	Av	Mag	MV	Own	G	Rr
..... 6B-S	General Purpose	4	Ver	1	2¼x1½	6.30	5.86	L	1.75-3200	1.36-3200	2.60-3200	21	Y	Av	Mag	MV	Own	G	Rr
..... 6S	General Purpose	4	Ver	1	2x2	6.28	5.86	L	1.75-3200	1.36-3200	2.60-3200	33	Y	Av	Mag	MV	Own	G	Rr
..... 8	General Purpose	4	Ver	1	2¼x2	7.95	5.40	L	2.50-3600	2.10-3600	3.70-3600	36	Y	MA	Mag	Car	Own	G	Rr
..... 8B	General Purpose	4	Ver	1	2½x1¾	7.75	6.00	....	2.75-3600	2.34-3600	4.02-3600	25	Y	Av	Mag	Car	Own	G	Rr
..... 8B-H	Lawn Mowers	4	Hor	1	2½x1¾	7.75	6.00	L	2.75-3600	2.34-3600	4.02-3600	19½	Y	Av	Mag	Car	Own	G	Rr
..... 8B-HA	Lawn Mowers	4	Hor	1	2½x1¾	7.75	6.00	L	2.75-3600	2.34-3600	4.02-3600	22½	Y	Av	Mag	Car	Own	G	Rc
..... 9	General Purpose	4	Ver	1	2¼x2¼	8.95	5.40	L	3.35-3600	2.80-3600	4.90-3600	61	Y	Me	Mag	Car	Own	G	HR
..... 14	General Purpose	4	Ver	1	2½x2½	14.21	5.40	L	5.25-3600	4.40-3600	7.70-3600	76	Y	Me	Mag	Car	Own	G	HR
..... 19	General Purpose	4	Ver	1	3x2½	18.56	5.60	L	7.00-3600	5.95-3600	10.21-3600	78	Y	Me	Mag	Car	Own	G	Hbp
..... 23A	General Purpose	4	Ver	1	3x3¼	22.97	5.90	L	9.00-3600	7.65-3600	13.10-3600	98	Y	Me	Mag	Car	Own	G	Hbp
Clinton AVS200, VS200	General Purpose	2	Ver	1	1⅞x1⅝	4.50	(a)	....	2.00-3600	1.50-3600	2.50-2600	15¾	Y	Av	Mag	Car	O-C	G	Rr
..... AVS400, VS400	General Purpose	2	Ver	1	2⅛x1⅝	5.76	(a)	....	2.50-3600	2.10-3600	3.65-3400	15¾	Y	Av	Mag	Car	O-C	G	Rr
..... VS2100	General Purpose	4	Ver	1	2⅝x1⅝	7.20	5.95	L	2.00-3600	1.60-3600	3.00-2800	19	Y	Av	Mag	Car	O-C	G	Rr
..... VS100	General Purpose	4	Ver	1	2⅝x1⅝	7.20	5.95	L	2.50-3600	2.00-3600	5.00-3000	19	Y	Av	Mag	Car	O-C	G	Rr
..... VS3100	General Purpose	4	Ver	1	2⅝x1⅞	8.30	6.00	L	3.00-3600	2.40-3600	4.85-2600	19	Y	Av	Mag	Car	O-C	G	Rr
..... VS900	General Purpose	4	Ver	1	2⅝x1⅞	8.30	6.00	L	2.75-3600	2.20-3600	5.15-2800	28	Y	Av	Mag	Car	O-C	G	Rre
..... VS1100	General Purpose	4	Ver	1	2⅝x2⅛	9.50	6.00	L	3.50-3600	2.80-3600	6.15-2800	28	Y	Av	Mag	Car	O-C	G	Rre
..... A200	General Purpose	4	Hor	1	1⅞x1⅝	4.50	(a)	L	2.00-3600	1.50-3600	2.50-2600	18	Y	Av	Mag	Car	O-C	G	Rr
..... A400	General Purpose	4	Hor	1	2⅛x1⅝	5.76	(a)	L	2.50-3600	2.00-3600	3.65-3400	18	Y	Av	Mag	Car	O-C	G	Rr
..... A2100	General Purpose	4	Hor	1	2⅝x1⅝	7.20	5.95	L	2.00-3600	1.60-3600	3.00-2800	19	Y	Av	Mag	Car	O-C	G	Rr
..... 100	General Purpose	4	Hor	1	2⅝x1⅝	7.20	5.95	L	2.50-3600	2.00-3600	5.00-3000	19	Y	Av	Mag	Car	O-C	G	Rr
..... 3100	General Purpose	4	Hor	1	2⅝x1⅞	8.30	5.90	L	2.40-3600	2.00-3600	4.85-2800	19	Y	Av	Mag	Car	O-C	G	Rr
..... D700	General Purpose	4	Hor	1	2½x1⅞	6.65	6.00	L	2.00-3600	1.60-3600	3.20-2800	39	Y	Fb	Mag	Car	O-C	G	Rr
..... 900	General Purpose	4	Hor	1	2⅝x1⅞	8.30	6.00	L	3.00-3600	2.40-3600	4.90-2800	41	Y	Fb	Mag	Car	O-C	G	Rr
..... 1200	General Purpose	4	Hor	1	2¾x2⅛	10.20	6.00	L	3.60-3600	2.90-3600	5.75-2800	43¼	Y	Fb	Mag	Car	O-C	G	Rr
..... 1600	General Purpose	4	Hor	1	2⅞x2⅜	12.30	6.00	L	6.30-3200	5.10-3200	10.50-2800	76	Y	Fb	Mag	Car	O-C	G	Rr
..... 2500	General Purpose	4	Hor	1	3½x3¼	25.00	6.00	L	9.00-3200	7.20-3200	16.20-1200	104	Y	Fb	Mag	Car	O-C	G	Rr
Continental AU7, AU7B	General Purpose	4	(b)	1	2½x2	7.10	6.10	L	2.00-3600	1.70-3600	3.02-3000	36	Y	MA	Mag	Car	CTZ	G	BR
..... AU7R	General Purpose*	4	(b)	1	2½x2	7.10	6.10	L	2.00-600	1.70-600	18.12-500	41	Y	MA	Mag	Car	CTZ	G	BR
..... AD7, AW7	Lawn Mowers	4	Ver	1	2½x2	7.10	6.10	L	2.00-3600	1.70-3600	3.02-3000	41	Y	Av	Mag	Car	CTZ	G	BR
..... AU8, AU8B	General Purpose	4	(b)	1	2¼x2	7.95	6.65	L	2.85-3600	2.42-3600	4.25-3000	36	Y	MA	Mag	Car	CTZ	G	BR
..... AU8R	General Purpose*	4	(b)	1	2¼x2	7.95	6.65	L	2.85-600	2.42-600	25.50-500	36	Y	MA	Mag	Car	CTZ	G	BR
..... AD8, AW8	Lawn Mowers	4	Ver	1	2¼x2	7.95	6.65	L	2.85-3600	2.42-3600	4.25-3000	41	Y	Av	Mag	Car	CTZ	G	BR
..... AU85	General Purpose	4	(b)	1	2⅝x2	8.40	6.10	L	3.00-3600	2.75-3600	4.50-2600	36	Y	MA	Mag	Car	CTZ	G	BR
..... AU85R	General Purpose*	4	(b)	1	2⅝x2	8.40	6.10	L	3.00-600	2.75-600	27.0-433	41	Y	MA	Mag	Car	CTZ	G	BR
..... AD85, AW85	Lawn Mowers	4	Ver	1	2⅝x2	8.40	6.10	L	3.00-3600	2.75-3600	4.50-2600	41	Y	Av	Mag	Car	CTZ	G	BR
..... AU10	General Purpose	4	(b)	1	2⅝x2	10.82	5.75	L	4.00-3600	3.40-3600	5.80-3600	38	Y	MA	Mag	Car	Til	G	BR
..... AD10, AW10	Lawn Mowers	4	Ver	1	2⅝x2	10.82	5.75	L	4.00-3600	3.40-3600	5.80-3600	43	Y	Av	Mag	Car	Til	G	BR
..... AV10R	General Purpose*	4	(b)	1	2⅝x2	10.82	5.75	L	4.00-3600	3.40-3600	5.80-3600	43	Y	MA	Mag	Car	Til	G	BR
Cushman Husky-M6	General Purpose	4	Ver	1	2⅝x2¾	12.30	4.70	L	3.00-3000	2.60-3000	5.20-2000	65	Y	Fb	Mag	Car	Til	G	R
..... Husky-M7	General Purpose	4	Ver	1	2⅝x2¾	14.90	5.40	L	4.50-3000	3.90-3000	7.90-2000	65	Y	Fb	Mag	Car	Til	G	R
..... Husky-M8	General Purpose	4	Ver	1	2⅝x2¾	17.80	5.90	L	5.00-3000	4.30-3000	9.50-2000	65	Y	Fb	Mag	Car	Til	G	R
..... Husky-M9	General Purpose	4	Ver	1	3x2¾	20.30	6.60	....	7.00-3600	5.60-....	11.90-2600	65	Y	Fb	Mag	Car	Til	G	BPE
Gladden 40	General Purpose	4	Ver	1	2½x3	14.70	4.50	L	4.30-3200	4.30-3200	8.40-2200	79	Y	Fb	Mag	Car	MS	G,K	Rr
..... 40M	Marine	4	Ver	1	2½x3	14.70	4.50	L	4.30-3200	4.30-3200	8.40-2200	80	Y	Fb	Mag	Car	MS	G	Rr
..... 50	General Purpose	4	Ver	1	2½x3	14.70	5.70	L	5.25-3200	5.25-3200	9.20-2500	81	Y	Fb	Mag	Car	MS	G	Rr
..... 75	General Purpose	4	Ver	1	2¾x3	19.40	5.70	L	7.00-3200	7.00-3200	13.50-2200	83	Y	Fb	Mag	Car	MS	G,K	Rr
..... 75ES	General Purpose	4	Ver	1	2¾x3	19.40	5.70	L	6.50-3200	6.50-3200	11.80-3200	136	N	....	Mag	Car	MS	G	Ele
..... 75M	Marine	4	Ver	1	2¾x3	19.40	5.70	L	7.00-3200	7.00-3200	11.80-3200	86	N	....	Mag	Car	MS	G	Rr
..... 75MES	Marine	4	Ver	1	2¾x3	19.40	5.70	L	6.50-3200	6.50-3200	11.00-3200	138	N	....	Mag	Car	MS	G	Ele
..... MC	Motorcycle	4	Ver	1	2¾x3	19.40	6.00	L	9.50-5000	9.00-4600	12.30-3000	65	N	....	Mag	Car	Am	G	Pe
Gravely L	Af	4	Ver	1	3¼x3½	29.00	5.00	T	5.00-2400	4.00-1800	12.00-1800	275	Opt	....	Mag	Car	Zen	G	Bge
Homelite 17	Chain Saws	2	Ver	1	2x1⅝	4.33	....	....	3.50-5800	3.50-5800	....	22	Y	Av	Mag	Car	O-T	G	Hc
..... 5-20	Chain Saws	2	....	1	2⅛x1½	5.00	....	....	5.00-6000	5.00-6000	....	20	Y	Av	Mag	Car	O-T	G	Hc
..... EZ	Chain Saws	2	Ver	1	2⅛x1½	5.00	....	....	5.00-6600	....	....	19	Y	Av	Mag	Car	Til	G	Hc
..... 20-5	Generator Sets	2	Ver	1	2⅝x1½	6.63	....	....	1.50-3600	....	....	....	Y	Va	Mag	Car	Til	G	Hc
..... 20	GS, Pu, Cs, Bl	2	Ver	1	2⅝x1½	6.70	5.50	(c)	3.50-3600	3.50-3600	....	20	Y	Va	Mag	Car	Til	G,K	Hc
..... 7-29	Chain Saws	2	Ver	1	2½x1½	7.98	....	....	7.00-5300	....	....	29	Y	Va	Mag	Car	Til	G	Hc
..... 23	GS, Pu, Bl	2	Ver	1	2¼x2½	8.40	5.50	(c)	4.00-3800	4.00-3800	....	30	Y	Va	Mag	Car	Own	G,K	Hc
..... 24	General Purpose	2	Ver	1	2⅝x2½	11.40	5.50	(c)	6.00-3800	6.00-3800	....	40	Y	Va	Mag	Car	O-Z	G,K	Hc
Jacobsen J-100	Lawn Mowers	2	Hor	1	2x1½	4.70	5.50	....	1.80-3600	1.63-3800	2.63-3600	18	Y	Av	Mag	Car	Til	G	Rc
..... J-100E	Lawn Mowers	2	Hor	1	2x1½	4.70	5.50	....	1.80-3600	1.63-3800	2.63-3600	27	Y	Av	Mag	Car	Til	G	Ele
..... J-125V	Lawn Mowers	2	Ver	1	2x1½	4.70	5.50	....	2.00-3600	1.80-3600	2.92-3600	18	Y	Av	Mag	Car	Til	G	Rc
..... J-125VE	Lawn Mowers	2	Ver	1	2x1½	4.70	5.50	....	2.00-3600	1.80-3600	2.92-3600	27	Y	Av	Mag	Car	Til	G	Ele
..... J-175V	Lawn Mowers	2	Ver	1	2¼x1¾	5.50	5.50	....	2.80-3600	2.55-3600	4.06-3800	19½	Y	Av	Mag	Car	Til	G	Rc
..... J-175VE	Lawn Mowers	2	Ver	1	2¼x1¾	5.50	5.50	....	2.80-3600	2.55-3600	4.06-3800	28½	Y	Av	Mag	Car	Til	G	Ele
..... J-200	Lawn Mowers	2	Hor	1	2x2	6.28	5.66	....	2.43-3600	2.20-3600	3.55-3800	46	Y	Av	Mag	Car	Til	G	Rc
..... J-200E	Lawn Mowers	2	Hor	1	2x2	6.28	5.66	....	2.43-3600	2.20-3600	3.55-3800	56	Y	Av	Mag	Car	Til	G	Ele
..... J-200V	Lawn Mowers	2	Ver	1	2x2	6.28	5.66	....	2.43-3600	2.20-3600	3.55-3800	48	Y	Av	Mag	Car	Til	G	Rc
..... J-200VE	Lawn Mowers	2	Ver	1	2x2	6.28	5.66	....	2.43-3600	2.20-3600	3.55-3800	56	Y	Av	Mag	Car	Til	G	Ele
..... J-225SV	Lawn Mowers	2	Ver	....	2¼x2	7.52	5.60	....	3.77-3600	3.40-3600	5.50-3600	48	....	....	....	Car	Til	G	Rc
..... J-225SVE	Lawn Mowers	2	Ver	....	2¼x2	7.52	5.60	....	3.77-3600	3.40-3600	5.50-3600	58	....	....	....	Car	Til	G	Ele
Kohler K90	General Purpose	4	Ver	1	2⅝x2	8.86	6.00	L	3.60-3600	3.10-3600	5.60-3000	41	Y	Fb	Mag	Car	Cart	G,K	Rr
..... K160	General Purpose	4	Ver	1	2⅞x2½	16.22	6.00	L	6.60-3600	5.40-3600	11.20-2400	67	Y	Fw	Mag	Car	Cart	G,K	ER
..... K330	General Purpose	4	Ver	1	3⅝x3¼	33.60	6.50	L	12.50-3200	10.60-3200	23.80-1800	175	Y	Fw	Mag	Car	Cart	G	ER
..... K660	General Purpose	4	Op	2	3⅝x3¼	67.20	6.00	L	26.80-3800	22.70-3600	43.80-1800	230	Y	Fw	Mag	Car	Cart	G,NgG	HE
Lauson ..... R	Lm, Pu	4	Hor	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	37	Y	Fb	Mag	Car	Til	G	R
..... 55A-400, 55A-420	General Purpose	4	Ver	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	33	Y	Fb	Mag	Car	Til	G	R
..... RSH-737, 55AB-600	General Purpose	4	Ver	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	28	Y	Fb	Mag	Car	Til	G	R
..... RSH-780	General Purpose*	4	Ver	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	43	Y	Fb	Mag	Car	Til	G	R
..... V-1	Lawn Mowers	4	Hor	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	31	Y	Fb	Mag	Car	Til	G	R

For Directory of the Engine Manufacturers listed above, see Table of Contents

MAKE AND MODEL	Designed for Use	Number of Cycles	ENGINE: Type	No. of Cylinders	Bore and Stroke (In.)	Total Displacement (Cu. In.)	Compression Ratio (to —1)	Valve Location	Horsepower: Rated at RPM	Horsepower: Continuous at RPM	Torque—Lb. Ft. at RPM	Weight (Lb.)	GOVERNOR: Used	GOVERNOR: Type	Ignition System Type	FUEL SYSTEM: Type	FUEL SYSTEM: Make	Fuel Used	Starting Method
AIR COOLED—Continued																			
Lauson—Cont'd RSV-600	Lawn Mowers	4	Hor	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	33	Y	Fb	Mag	Car	Til	G	R
V17	Lawn Mowers	4	Hor	1	2¼x1¾	6.20	6.20	L	1.75-3600	1.50-3600	3.26-3200	19½	Y	Av	Mag	Car	Wal	G	RA
V20	Lawn Mowers	4	Hor	1	2¼x1¾	6.20	6.20	...	2.00-3400	1.75—	3.40-3200	19½	Y	Av	Mag	Car	Wal	G	RA
V22	Lawn Mowers	4	Hor	1	2⅜x1¾	7.35	6.20	L	2.25-3600	2.00-3600	3.60-2800	19½	Y	Av	Mag	Car	Wal	G	RA
V25	Lawn Mowers	4	Hor	1	2⅜x1¾	7.35	6.20	L	2.50-3600	2.20-3600	3.75-3000	19½	Y	Av	Mag	Car	Wal	G	RA
TLV-900	Lawn Mowers	4	Hor	1	2¼x2¼	8.95	5.80	L	3.00-3200	2.50-3200	4.70-3200	58	Y	Fb	Mag	Car	Til	G	R
TLH-725	General Purpose	4	Ver	1	2¼x2½	8.95	5.80	L	3.30-3600	2.70-3600	4.80-3600	52	Y	Fb	Mag	Car	Til	G	R
TLH-661	General Purpose*	4	Ver	1	2¼x2¼	8.95	5.80	L	3.30-3600	2.70-3600	4.80-3600	85	Y	Fb	Mag	Car	Til	G	R
P-25	General Purpose	4	Ver	1	2⅝x2¾	17.85	6.30	L	6.30-3600	5.50-3600	9.50-3000	85	Y	Fb	Mag	Car	Til	G	R
P-27	General Purpose*	4	Ver	1	2⅝x2¾	17.85	6.30	L	6.30-3600	5.50-3600	9.50-3000	103	Y	Fb	Mag	Car	Til	G	R
McCulloch 35	Chain Saws	2	Ver	1	1¾x1¾	3.30	7.20	Re	2.20-5600	.....	2.80-4800	20	N	.....	Mag	Car	Own	G	AR
39	Chain Saws	2	Ver	1	1¾x1¾	3.30	7.20	Re	3.25-6500	.....	2.70-5500	21	N	.....	Mag	Car	Own	G	AR
D-44	Chain Saws	2	Hor	1	2x1⅝	4.33	7.60	Re	4.60-7000	.....	3.90-6000	21	Y	Av	Mag	Car	Til	G	AR
55	Chain Saws	2	Hor	1	2x1⅝	4.33	7.60	Re	4.60-7000	.....	3.90-5000	24	Y	Av	Mag	Car	Til	G	AR
49	Chain Saws	2	(f)	1	2½x1½	5.30	6.70	Re	4.50-6000	.....	4.50-4000	29	Y	RV	Mag	Car	Til	G	AR
77	Chain Saws	2	Ver	1	2½x1½	7.35	6.80	(c)	6.75-6500	.....	6.70-4000	32	Y	Ce	Mag	Car	Own	G	AR
99	Pu, Ca, ED	2	Hor	1	2½x2	9.82	6.50	(c)	8.00-5200	.....	11.80-3600	56	Y	Ce	Mag	Car	Own	G	AR
Onan AK	Generator Sets	4	Ver	1	2½x2½	12.20	5.50	L	3.78-3600	2.82-3600	5.80-1800	74	Y	(d)	Mag	Car	Cart	G	HEA
AJ	Generator Sets	4	Ver	1	2⅝x2½	14.90	6.25	L	5.10-3600	3.82-3600	8.00-2100	74	Y	(d)	Mag	Car	Cart	G	BPA
LK	Generator Sets	4	Ver	1	3¼x3	24.89	5.64	L	5.10-1800	4.34-1800	14.90-1800	114	Y	(d)	Mag	Car	Cart	G	HEA
CK	General Purpose	4	Op	2	3x2¾	38.80	6.20	L	10.10-3000	8.60-3000	10.00-3000	95	Y	(d)	BM	Car	MS	NgG	ERA
ACK	Generator Sets	4	Op	2	3x2¾	38.80	6.25	L	13.80-3600	10.00-3600	20.00-3600	125	Y	Me	Mag	Car	Til	G	RA
VB	Generator Sets	4	Vee	2	3¼x2¾	45.70	6.25	I	19.25-3600	16.20-3600	29.80-2800	140	Y	Me	Mag	Car	Zen	G	Ele
CCK	GP, Rf	4	Op	2	3¼x3	49.80	5.56	L	13.60-3000	11.50-3000	27.80-1800	148	Y	(d)	Mag	Car	MS	G	HEA
CW	Generator Sets	4	Op	2	4x3½	98.00	5.50	L	20.00-1800	16.50-1800	58.30-1800	420	Y	Fb	Mag	Car	Zen	G	HE
Power Products AV36-2032	General Purpose	2	Ver	1	1¾x1½	3.60	.....	Re	1.30-3400	1.30-3400	1.92-3100	12¼	Y	Fb	Mag	Car	Til	G	R
AH36-1007	General Purpose	2	Hor	1	1¾x1½	3.60	.....	Re	1.30-3400	1.30-3400	1.92-3100	14¼	Y	Fb	Mag	Car	Til	G	R
AV36-2033	General Purpose	2	Ver	1	1¾x1½	3.60	.....	Re	1.40-3200	1.40-3200	2.00-3200	15	Y	Fb	Mag	Car	Til	G	AR
AH36-1008	General Purpose	2	Hor	1	1¾x1½	3.60	.....	Re	1.40-3200	1.40-3200	2.00-3200	17	Y	Fb	Mag	Car	Til	G	AR
AV47-2034	General Purpose	2	Ver	1	2x1½	4.70	.....	Re	1.90-3800	1.90-3800	2.67-3400	13	Y	Fb	Mag	Car	Til	G	R
AH47-1009	General Purpose	2	Hor	1	2x1½	4.70	.....	Re	1.90-3800	1.90-3800	2.67-3400	15	Y	Fb	Mag	Car	Til	G	R
AV47-2035	General Purpose	2	Ver	1	2x1½	4.70	.....	Re	1.80-3200	1.80-3200	2.92-3400	15¼	Y	Fb	Mag	Car	Til	G	AR
AH47-701	General Purpose	2	Hor	1	2x1½	4.70	.....	Re	1.80-3200	1.80-3200	2.92-3400	17	Y	Fb	Mag	Car	Til	G	AR
AH47-1010	General Purpose	2	Hor	1	2x1½	4.70	.....	Re	1.80-3200	1.80-3200	2.92-3400	17¼	Y	Fb	Mag	Car	Til	G	AR
V47-502	Lawn Mowers	2	Ver	1	2x1½	4.70	.....	Re	1.80-3400	1.80-3400	2.83-3200	13	Y	Av	Mag	Car	Til	G	R
V47-800	Lawn Mowers	2	Ver	1	2x1½	4.70	.....	Re	2.00-3400	2.00-3400	3.06-3200	17	Y	Fb	Mag	Car	TM	G	AR
BV69-361	General Purpose	2	Op	2	1¾x1⅞	6.90	.....	Re	2.30-3300	2.30-3300	2.50-3400	27½	Y	Fb	Mag	Car	Til	G	R
BH69-372	General Purpose	2	Op	2	1¾x1⅞	6.90	.....	Re	2.50-3300	2.50-3300	2.50-3400	27¾	Y	Fb	Mag	Car	Til	G	R
AV80-407	General Purpose	2	Ver	1	2¼x2	8.00	.....	Re	3.40-3400	3.40-3400	5.50-3000	23½	Y	Fb	Mag	Car	Til	G	R
AH80-410	General Purpose	2	Hor	1	2¼x2	8.00	.....	Re	3.40-3400	3.40-3400	5.50-3000	26	Y	Fb	Mag	Car	Til	G	AR
Reo MW-5200-7	Lawn Mowers	4	Hor	1	2½x1⅞	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	28½	Y	Av	Mag	Car	Cart	G	AR
MW-5210-7	Lawn Mowers	4	Hor	1	2½x1⅞	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	31½	Y	Av	Mag	Car	Cart	G	AR
MW-5220-7	Snow Plows	4	Hor	1	2½x1⅞	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	32	Y	Av	Mag	Car	Cart	G	AR
MW-5230-7	Lawn Mowers	4	Ver	1	2½x1⅞	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	32	Y	Av	Mag	Car	Cart	G	AR
MW-5240-7	Lawn Mowers	4	Hor	1	2½x1⅞	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	27	Y	Av	Mag	Car	Cart	G	R
MW-5250-7	Lawn Mowers	4	Ver	1	2½x1⅞	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	32¼	Y	Av	Mag	Car	Cart	G	AR
West Bend 390	General Purpose	2	Hor	1	1¾x1⅝	3.90	.....	Re	1.50-3600	1.50-3600	2.30-3600	14½	Y	Av	Mag	Car	Til	G	RA
390	General Purpose	2	Ver	1	1¾x1⅝	3.90	.....	Re	1.50-3600	1.50-3600	2.30-3600	14½	Y	Av	Mag	Car	Til	G	RA
510	General Purpose	2	Hor	1	2x1⅝	5.10	.....	Re	3.00-4500	3.00-4500	3.60-4500	13½	N	.....	Mag	Car	Til	G	Rc
510	General Purpose	2	Ver	1	2x1⅝	5.10	.....	Re	3.00-4500	3.00-4500	3.60-4500	13½	N	.....	Mag	Car	Til	G	Rc
645	General Purpose	2	Hor	1	2¼x1⅝	6.45	.....	Re	4.00-4500	4.00-4500	4.80-4500	13½	N	.....	Mag	Car	Til	G	Rc
645	General Purpose	2	Ver	1	2¼x1⅝	6.45	.....	Re	4.00-4500	4.00-4500	4.80-4500	13½	N	.....	Mag	Car	Til	G	Rc
Wisconsin ACN	General Purpose	4	Ver	1	2⅝x2¾	14.88	5.78	L	5.60-3600	4.50-3600	8.60-2600	76	Y	Ce	Mag	Car	MS	G	R
BKN	General Purpose	4	Ver	1	2⅞x2¾	17.80	5.22	L	6.80-3600	5.50-3600	10.80-2600	76	Y	Ce	Mag	Car	MS	G	R
AEH	General Purpose	4	Ver	1	3x3¼	23.00	4.74	L	6.10-2600	4.90-2600	13.00-2000	130	Y	Ce	Mag	Car	Zen	G	R
AEN	General Purpose	4	Ver	1	3x3¼	23.00	5.34	L	8.30-3400	6.64-3400	15.40-2200	110	Y	Ce	Mag	Car	Zen	G	R
AFH	General Purpose	4	Ver	1	3¼x4	33.20	4.53	L	7.20-2200	5.75-2200	19.80-1400	180	Y	Ce	Mag	Car	Zen	G	Hc
AGH	General Purpose	4	Ver	1	3½x4	38.50	4.46	L	8.40-2200	6.70-2200	24.20-1300	180	Y	Ce	Mag	Car	Zen	G	Hc
AHH	General Purpose	4	Ver	1	3⅝x4	41.30	4.50	L	9.20-2200	7.40-2200	25.80-1300	180	Y	Ce	Mag	Car	Zen	G	Hc
TE	General Purpose	4	Ver	2	3x3¼	45.90	5.44	L	11.20-2600	9.00-2600	27.10-1600	220	Y	Ce	Mag	Car	Zen	G	Hc
TF	General Purpose	4	Ver	2	3¼x3¼	53.90	5.50	L	14.60-2600	11.68-2600	32.50-1700	220	Y	Ce	Mag	Car	Zen	G	Hc
TFD	General Purpose	4	Ver	2	3¼x3¼	53.90	5.50	L	15.00-3000	12.00-3000	32.50-1700	220	Y	Ce	Mag	Car	Zen	G	Hc
WATER COOLED																			
Universal AFTC	Generator Sets	4	Ver	2	3x3½	49.50	5.79	L	5.00-1200	6.00-1350	25.00-1200	385	Y	Me	BM	Car	Str	G	HE
AFC	GS, In	4	Ver	4	3x3½	99.00	5.79	L	19.00-1800	18.00-1800	53.00-1800	....	Y	Me	BM	Car	Str	G, Ng	HE

ABBREVIATIONS

*—Reduction gear model.
(a)—65 pounds per square inch.
(b)—Inclined 20° up from horizontal.
(c)—Rotary intake valve in crankcase
(d)—Flyweights on camshaft.
(f)—Inclined 45° up from horizontal.
Af—Auxiliary farm implement equipment.
Am—Amal.
AR—Automatic rewinding rope.
Av—Air vane.
Bl—Blowers.
BM—Battery and magneto.
BP—Belt or pulley.
BPA—Belt, pulley or automatic rewinding rope.
Bpe—Belt, pulley or electric.
BPE—Belt, pulley, pedal or electric.
BR—Belt, pulley or recoil.
Car—Carburetor.
Cart—Carter Carburetor Corp.
Ce—Centrifugal.
Cs—Chain saws.
CTZ—Carter, Tillotson or Zenith.
ED—Earth drills.
Ele—Electric.
ER—Electric or rope.
ERA—Electric, rope or automatic rewinding rope.
Fb—Flyball.
Fw—Flyweight.
G—Gasoline.
GP—General purpose.
GS—Generator sets.
Hbp—Hand crank, belt or pulley.
Hc—Hand crank.
HE—Hand crank or electric.
HEA—Hand crank, electric or automatic rewinding rope.
Hor—Horizontal.
HR—Hand crank or rope.
I—Valves in head.
In—Industrial.
K—Kerosene.
L—"L" head, valves at side.
Lm—Lawn mowers.
MA—Mechanical or air vane.
Mag—Magneto.
Me—Mechanical.
MS—Marvel-Schebler Carburetor Div.
MV—Mixing valve.
N—No or none.
Ng—Natural gas.
Ng G—Combination of natural gas and gasoline.
O-C—Own or Carter.
Op—Opposed.
Opt—Optional.
O-T—Own and Tillotson.
O-Z—Own and Zenith.
Pe—Pedal.
Pu—Pumps.
R—Rope.
RA—Rope or automatic rewinding rope.
Rc—Recoil.
Re—Reed valves.
Rf—Refrigeration equipment.
Ro—Rotary.
Rr—Recoil or rope.
Rre—Recoil, rope or electric.
RV—Rotary valve.
Str—Stromberg Carburetor Div.
T—"T" head.
Til—Tillotson Mfg. Co.
TM—Tillotson or Marvel-Schebler.
Va—Valve.
Vee—"V" type engine.
Ver—Vertical.
Wal—Walbro.
Y—Yes.
Zen—Zenith Carburetor Div.

For Directory of the Engine Manufacturers listed above, see Table of Contents

1957 / U. S. OUTBOARD MOTORS

MAKE AND MODEL	Power Head	Number of Cylinders	Cylinder Material	Bore and Stroke (In.)	Piston Displacement (Cu. In.)	Engine Type	Brake Hp. at R.P.M. O.B.C. Rating	Engine Weight (Lb.) Fully Equipped	Piston Rings—Number and Width	Propeller: Diameter (In.)	Propeller: Pitch	Propeller: Right or Left Hand Rotation	Propeller: Number of Blades	Starting Device	Fuel Tank Capacity (Pts.)	Gear: Ratio	Gear: Tooth Pitch	Gear: Material (S.A.E. No.)	Gearcase Bearing	Magneto Make	Carburetor: Make	Carburetor: Size (In.)	Carburetor: Starting Mixture Obtained by—	Spark Plug—Make and Model	Bearings: Main	Bearings: Connecting Rod	Cooling System	Reverse	Lubrication—Pints Oil to 1 Gal. Gasoline
Buccaneer 3D14B	Re-2 Port	1	ACS	2¼x1½	5.32	S	3.0-4000	38	2-3/32	6⅝	6⅝	L	2	RR	6.4	13-22	13.56	8620	PI	Own	Own	¾	Pr	Ch-J6J[1]	PI	PI	Pp	No	½
5S13B	Re-2 Port	2	ACS	1⅞x1½	8.84	AF	5.0-4000	45	3-3/32	7½	7¼	L	2	RR	7.2	13-22	10.38	8620	PI	Own	Own	⅞	Pr	Ch-J6J[1]	PI	PI	Pp	No	½
5D14B	Re-2 Port	2	ACS	1⅞x1½	8.84	AF	5.0-4000	52	3-3/32	8	7¼	R	2	RR	8.0	15-26	12.33	8620	PI	Own	Own	⅞	C	Ch-J6J[1]	PI	PI	Cen	Yes	½
12S13B	Re-2 Port	2	ACS	2¼x2¼	17.89	AF	12.0-4000	66	3-3/32	9	11	R	3	RR	16.0	12-21	8.97	8620	PI	Own	Own	1⅛	C	Ch-J6J[1]	PI	PI	Cen	...	½
12D15B	Re-2 Port	2	ACS	2¼x2¼	17.89	AF	12.0-4000	75[2]	3-3/32	9	11	R	3	RR	48.0	12-21	8.97	8620	PI	Own	Own	1⅛	C	Ch-J6J[1]	PI	PI	Cen	Yes	½
12DE15B	Re-2 Port	2	ACS	2¼x2¼	17.89	AF	12.0-4000	86[2]	3-3/32	9	11	R	3	Ele	48.0	12-21	8.97	8620	PI	Own	Own	1⅛	C	Ch-J6J[1]	PI	PI	Cen	Yes	½
22D14B	Re-2 Port	2	ACS	2½x2⅝	35.70	AF	25.0-4000	118[2]	3-3/32	10⅝	12½	R	3	RR	48.0	12-21	7.50	8620	A	Own	Own	1¼	C	Ch-J6J[1]	A	A	Cen	Yes	½
22DE14B	Re-2 Port	2	ACS	2½x2⅝	35.70	AF	25.0-4000	129[2]	3-3/32	10⅝	12½	R	3	Ele	48.0	12-21	7.50	8620	A	Own	Own	1¼	C	Ch-J6J[1]	A	A	Cen	Yes	½
Champion 2N Guide Four[3]		1	.....	2⅛x1⅝	5.84	S	4.2-4300	42	.....	7½	6	.....	2	RR	10.0										Ch-7	.....	A	.....	No	½
3N-S Guide Six[3]		2	.....	1⅝x1⅝	9.66	AF	6.0-4300	46	.....	7½	9	.....	2	RR	10.0										Ch-J7J	.....	A	.....	Yes	½
4N-D DeLuxe		2	.....	1⅝x1⅝	9.66	AF	7.8-4300	46[4]	.....	7½	9½	.....	2	RR	28.0[5]										Ch-J7J	.....	A	.....	Yes	½
6N-D DeLuxe, 6N-MS Midship		2	.....	2⅛x2⅜	19.94	AF	16.5-4330[6]	54	.....	8	11	.....	3	RR	48.0[7]										Ch-J8J	A	A	.....	Yes	½
6N-HR Hotrod		2	.....	2⅛x2⅜	19.94	AF		46	.....	7	13½	.....	2	Ro	16.0[7]										Ch-R7	A	A	.....	No	1
Elgin 571.58221	Re-2 Port	1	ACS	1⅝x1⅛	3.76	S	2.0-4000	29	3-1/16	6½	4	L	2	RR	5.0	14-21	12.00	4140	PI	Wico	Til	½	C	Ch-J11J	PI	PI	Air	No	½
571.58521	Re-2 Port	2	ACS	2 x1⅛	10.60	AF	5.5-4000	54	3-1/16	7½	7	R	2	RR	38.0[7]	14-23	12.00	4140	PI	Wico	Til	⅝	C	Ch-H10J	PA	A	VP	Yes	½
571.58781	Re-2 Port	2	ACS	2⅛x1⅛	11.97	AF	7.5-4300	52	3-1/16	7½	8	L	2	RR	47.0[8]	14-21	12.00	4140	PI	Wico	Til	⅝	C	Ch-J11J	PA	A	VP	Yes	½
571.58721	Re-2 Port	2	ACS	2⅛x1⅛	11.97	AF	7.5-4000	54	3-1/16	8	8	R	2	RR	38.0[7]	14-23	12.00	4140	PI	Wico	Til	⅝	C	Ch-H8J	PA	A	VP	Yes	½
571.58941	Re-2 Port	2	ACS	2⅝x2	17.72	AF	12.0-4000	58	3-1/16	8½	8	R	3	RR	48.0[7]	14-23	10.00	4140	A	Wico	Til	¾	C	Ch-H8J	A	A	VP	Yes	½
571.59421, 571.59621, 571.59901	Re-2 Port	2	ACS	3 x2⅛	38.26	AF	30.0-4200	118	3-1/16	10⅝	12	R	3	REG	48.0[7]	13-21	8.00	4140	A	FM	Til	1⅛	C	Ch-H8J	A	PA	VP	Yes	½
Evinrude Lightwin 3022	Re-2 Port	2	ACS	1⅞x1⅝	5.28	AF	3.0-4000	33	2-3/32	6½	6¼	L	2	RR	5.6	17-28	15.68	8620	PI	Own	Own	⅝	C	Ch-J6J[1]	PI	PI	Cen	Yes	½
Ducktwin 3024	Re-2 Port	2	ACS	1⅞x1⅝	5.28	AF	3.0-4000	33	2-3/32	6½	6¼	L	2	RR	5.6	17-28	15.68	8620	PI	Own	Own	⅝	C	Ch-J6J[1]	PI	PI	Cen	Yes	½
Fisherman 5514	Re-2 Port	2	ACS	1⅞x1½	8.84	AF	5.5-4000	56	3-3/32	8	7¼	R	2	RR	34.0	15-26	12.40	8620	PI	Own	Own	⅝	C	Ch-J6J[1]	PI	PI	Cen	Yes	½
Fleetwin 7522	Re-2 Port	2	ACS	2⅛x1⅝	12.40	AF	7.5-4000	59	3-3/32	8	8½	R	2	RR	34.0	15-26	12.40	8620	PI	Own	Own	⅝	C	Ch-J6J[1]	PI	PI	Cen	Yes	½
Sportwin 10014	Re-2 Port	2	ACS	2⅝x1⅞	16.60	AF	10.0-4000	74	3-3/32	9	8	R	3	RR	48.0	15-26	11.11	8620	PI	Own	Own	⅞	C	Ch-J6J[1]	PA	A	Cen	Yes	½
Fastwin 15020	Re-2 Port	2	ACS	2½x2¼	22.00	AF	18.0-4500	80	3-3/32	9¼	11	R	3	RR	48.0	12-21	8.97	8620	PI	Own	Own	⅞	C	Ch-J6J[1]	A	A	Cen	Yes	½
Fastwin 15922	Re-2 Port	2	ACS	2½x2¼	22.00	AF	18.0-4500	87	3-3/32	9¼	11	R	3	Ele	48.0	12-21	8.97	8620	PI	Own	Own	⅞	C	Ch-J6J[1]	A	A	Cen	Yes	½
Big Twin 25028	Re-2 Port	2	ACS	3½x2⅝	40.50	AF	35.0-4500	123	3-3/32	10⅝	13¼	R	3	RR	48.0	12-21	7.50	8620	A	Own	Own	1¼	C	Ch-J6J[1]	A	A	Cen	Yes	½
Big Twin 25930	Re-2 Port	2	ACS	3½x2⅝	40.50	AF	35.0-4500	129	3-3/32	10⅝	13¼	R	3	Ele	48.0	12-21	7.50	8620	A	Own	Own	1¼	C	Ch-J6J[1]	A	A	Cen	Yes	½
Lark 25532	Re-2 Port	2	ACS	3½x2⅝	40.50	AF	35.0-4500	132	3-3/32	10⅝	13¼	R	3	Ele	48.0	12-21	7.50	8620	A	Own	Own	1¼	C	Ch-J6J[1]	A	A	Cen	Yes	½
Fageol 44	Poppet	4	CI	2½x2¼	44.00	AF	35.0-5200	191	4-1/16[9]	10	11	R	3	Ele	48.0	.....	8.00	4615	A	Dis	Zen	⅝	C	Ch-J6	PI	PI	Cen	Yes	PL
Flambeau 125520	-3 Port	1	CI	1⅛x1⅛	4.62	S	2.5-4000	29	3-3/32	7	6	L	2	RR	6.0	13-24	12.00	1315	PI	Eis	Own	.....	C	Ch-J7J	PI	PI	RP	No	½
174050	-3 Port	2	CI	1⅛x1⅛	9.24	AF	5.0-4000	35	3-3/32	8	8½	L	2	RR	6.0	13-24	12.00	1315	PI	Eis	Own	.....	C	Ch-J7J	PI	PI	RP	No	½
Johnson JW	Re-2 Port	2	ACS	1⅞x1⅝	5.28	AF	3.0-4000	32	2-3/32	6½	5¾	L	3	RR	5.0	17-28	15.68	4615	PI	Own	Own	⅝	C	Ch-J6J	PI	PI	.....	Yes	½
CD	Re-2 Port	2	ACS	1⅞x1½	8.84	AF	5.5-4000	47	3-3/32	8	7¼	R	2	RR	32.0[7]	15-26	12.39	4615	PI	Own	Own	⅝	C	Ch-J6J	PI	PI	VP	Yes	½
AD	Re-2 Port	2	ACS	2⅛x1⅝	12.40	AF	7.5-4000	56	3-3/32	8	8½	R	2	RR	36.0[7]	15-26	12.33	4615	PI	Own	Own	⅝	C	Ch-J6J[1]	PI	PI	VP	Yes	½
QD	Re-2 Port	2	ACS	2⅝x1⅞	16.60	AF	10.0-4000	70	3-3/32	9	8	R	3	RR	48.0[7]	12-21	8.97	4615	PA	Own	Own	⅞	C	Ch-J6J	A	A	.....	Yes	½
FD	Re-2 Port	2	CI	2½x2¼	22.00	AF	18.0-4500	77	3-1/16	9¼	11¼	R	3	RR	48.0	.....	8.97	8620	A	Own	Own	⅞	C	Ch-J6J[1]	A	A	VP	.....	½
FDE	Re-2 Port	2	CI	2½x2¼	22.00	AF	18.0-4500	87	3-1/16	9¼	11¼	R	3	Ele	48.0	.....	8.97	8620	A	Own	Own	⅞	C	Ch-J6J[1]	A	A	VP	.....	½
RD	Re-2 Port	2	CI	3½x2⅝	40.50	AF	35.0-4500	123	3-1/16	10⅝	13¼	R	3	RR	.....	.....	7.50	8620	A	Own	Own	1½	C	Ch-J6J	A	A	VP	Yes	½
RDE	Re-2 Port	2	CI	3½x2⅝	40.50	AF	35.0-4500	134	3-1/16	10⅝	13¼	R	3	Ele	.....	.....	7.50	8620	A	Own	Own	1½	C	Ch-J6J	A	A	VP	Yes	½
RJE	Re-2 Port	2	CI	3½x2⅝	40.50	AF	35.0-4500	136	3-1/16	10⅝	13¼	R	3	Ele	.....	.....	7.50	8620	A	Own	Own	1½	C	Ch-J6J	A	A	VP	Yes	½
Mercury Mark 6		2	.....	1⅝x1½	7.20	AF	5.9-5000	42	.....	.....	.....	.....	.....	RR	26.0[7]	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	No	.....
Mark 10		2	.....	2⅛x2⅛	18.53	AF	10.0-5000	66	.....	.....	.....	.....	.....	RR	48.0[7]	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 25	..	2	.....	2⅛x2⅛	19.80	AF	20.0-5800	75	.....	.....	.....	.....	.....	RR	48.0[7]	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 25E	..	2	.....	2⅛x2⅛	19.80	AF	20.0-5800	85	.....	.....	.....	.....	.....	ER	48.0[7]	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 30	.....	4	.....	2⅛x2⅛	29.70	AF	30.0-5800	110	.....	.....	.....	.....	.....	RR	48.0[7]	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 30E	.....	4	.....	2⅛x2⅛	29.70	AF	30.0-5800	118	.....	.....	.....	.....	.....	ER	48.0[7]	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 55		4	.....	2⅛x2⅛	39.60	AF	40.0-5800	111	.....	.....	.....	.....	.....	RR	48.0[7]	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 55E		4	.....	2⅛x2⅛	39.60	AF	40.0-5800	120	.....	.....	.....	.....	.....	ER	48.0[7]	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 75		6	.....	2⅛x2⅛	59.40	AF	60.0-5830	168	.....	.....	.....	.....	.....	ER	48.0[7]	.....	.....	.....	.....	Dis	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Neptune AA 1	Re-2 Port	1	ACS	1⅞x1½	2.87	S	1.7-4000	17	2-3/32	6	5	L	2	Ro	2.0	13-20	14.00	.....	PI	Phe	Til	.....	Fl	Ch-J8J	PI	PI	Cp	Yes	½
Oliver J3	Re-2 Port	2	ACS	2 x1½	9.42	AF	6.0-4500	50	2-1/16	7½	6	L	2	RR	28.0	13-21	10.00	8615	PA	Scin	Til	¾	C	Ch-J8J	PI	PI	Fvr	Yes	½

K3	Re-2 Port	2	ACS	2½x2 7/16	19.94	AF	16.0-4500	78	2-1/4	9	11	L	2	RR	52.0	12-21	10.00	8615	PA	Scin	Til	1	C	Ch-H8J	A	A	Fvr	Yes	5/8
K3E	Re-2 Port	2	ACS	2½x2 7/16	19.94	AF	16.0-4500	88	2-1/4	9	11	L	2	ER	52.0	12-21	10.00	8615	PA	Scin	Til	1	C	Ch-H8J	A	A	Fvr	Yes	5/8
B-Std., B-DeLuxe	Poppet	2	CI	3 x2 7/16	42.34	AF	35.0-4200	127	3-3/8	10	13	L	3	Ele	52.0	13-21	8.00	8615	A	Scin	Til	1 1/16	C	Ch-S Com	A	A	Fvr	Yes	5/8
Scott-Atwater[10] 3075	Re-2 Port	1	ACS	2½x1¾	6.23	S	3.6-4000	39	2-1/4	7½	6	R	2	RR	8.0	13-21	12.56	8640	PA	Phe	Til	3/4	C	Ch-H10J	PI	PA	RP	No	1/2
3775	Re-2 Port	2	ACS	1½x1½	7.48	AF	5.0-4200	45	2-1/4	7½	6	L	2	RR	26.07	13-21	10.75	8640	PA	Wico	Til	5/8	C	Ch-H10J	PA	PA	Fvr	Yes	1/2
3375	Re-2 Port	2	ACS	2 x1¾	11.00	AF	7.5-4200	49	2-1/4	8	7	L	2	RR	48.07	13-21	10.75	8640	PA	Phe	Til	3/4	C	Ch-H10J	PI	PA	Fvr	Yes	1/2
3875	Re-2 Port	2	ACS	2½x2	14.82	AF	10.0-4200	58	3-1/4	7 1/16	9½	L	2	RR	48.07	13-21	10.75	8640	PA	Wico	Til	3/4	C	Ch-H10J	PA	PA	Fvr	Yes	1/2
3975	Re-2 Port	2	ACS	2½x2 7/16	19.95	AF	16.0-4200	75	3-1/4	9	9	L	2	ER	48.07	15-23	9.25	8640	A	Wico	Til	1	C	Ch-SMJ	A	PA	Fvr	Yes	1/2
3675	Re-2 Port	2	ACS	3½x2¾	42.18	AF	40.0-4800	143	3-3/8	10	14½	L	2	ER	48.0	13-22	8.00	8620	A	Phe	Til	1 1/16	C	Ch-J6J	A	A	Fvr	Yes	1/2
Royal Scott 536	Re-2 Port	2	ACS	3½x2¾	42.18	AF	40.0-4800	145	3-3/8	10	14½	L	2	ER	48.0	13-22	8.00	8620	A	Phe	Til	1 1/16	C	Ch-J6J	A	A	Fvr	Yes	1/2
West Bend 160211	Re-2 Port	1	ACS	1¾x1 3/8	3.76	S	2.0-4000	29	3-1/4	6½	4	L	2	RR	5.0	14-21	12.00	4140	PI	Wico	Til	½	C	Ch-J11J	PI	PI	Air	No	1/2
160502	Re-2 Port	2	ACS	2 x1 1/16	10.60	AF	5.5-4000	54	3-1/4	7½	7	R	2	RR	36.07	14-23	12.00	4140	PI	Wico	Til	½	C	Ch-H10J	PA	A	VP	Yes	1/2
160702	Re-2 Port	2	ACS	2½x1 1/16	11.97	AF	7.5-4000	54	3-1/4	8	8	R	2	RR	36.07	14-23	12.00	4140	PI	Wico	Til	½	C	Ch-H8J	PA	A	VP	Yes	1/2
160903	Re-2 Port	2	ACS	2½x2	17.72	AF	12.0-4000	58	3-1/4	8½	8	R	3	RR	48.07	14-23	10.00	4140	PA	Wico	Til	5/8	C	Ch-H8J	A	A	VP	Yes	1/2
1609421, 1609621, 160801	Re-2 Port	2	ACS	3 x2 1/16	38.26	AF	30.0-4200	118	3-3/8	10 5/8	12	R	3	REG	48.07	13-21	8.00	4140	A	FM	Til	1 1/16	C	Ch-H8J	A	PA	VP	Yes	1/2

ABBREVIATIONS

1—Auto-Lite A3X also used.
2—Not including separate fuel tank.
3—Similar models produced under trade names of Majestic and Voyager.
4—Majestic and Voyager, 47.
5—Separate gas tank; Majestic and Voyager models, 10.0.
6—Majestic and Voyager, 15.0-4300.
7—Separate gas tank.
8—Integral and separate gas tank.
9—Compression only; oil, 1/32.
10—Similar models produced under the trade names of Corsair, Firestone and Hiawatha.
A—Antifriction.
ACS—Aluminum with cast iron sleeves.
AF—Alternate firing.
C—Choke.
Car—Carter Curburetor Co.
Cen—Centrifugal.
Ch—Champion Spark Plug Co.
CI—Cast iron.
Cp—Cam pump.
Dis—Distributor used in place of magneto.
Eis—Eiseman (Jack & Heintz Precision Ind.).
Ele—Electric.
ER—Electric and rewinding rope.
Fl—Flooding.
FM—Fairbanks Morse & Co.
FVR—Flexible vane rotor.
L—Left.
PA—Plain and antifriction.
Phe—R. E. Phelon Co.
PI—Plain.
PL—Pressure lubrication.
Pp—Plunger pump.
Pr—Primer.
R—Right.
Re—Reed valve.
REG—Rewinding rope, electric or electric with generator.
Ro—Rope.
RP—Rotary pump.
RR—Rewinding rope.
S—Single.
Scin—Scintilla Magneto Div.
Til—Tillotsen Mfg. Co.
VP—Vane pump.
Wico—Wico Electric Co.
Zen—Zenith.

DIESEL ENGINES FOR USE IN DIESEL-ELECTRIC LOCOMOTIVES

ENGINE MAKE AND MODEL	Cylinder Arrangement	Cycle	No. of Cylinders, Bore and Stroke (In.)	Displacement (Cu. In.)	Compression Ratio	Maximum Brake HP at Specified RPM	Continuous HP at Specified RPM	Supercharger Used	Weight (Lb.)	OVERALL DIMENSIONS (In.) Length	Width	Height
ALCO 251B	I	4	6-9x10½	4008	13.00	975-1000	900-1000	Yes	22100	135 1/16	58 3/16	87 1/16
251B	V	4	12-9x10½	8016	13.00	1950-2000	1800-2000	Yes	32650	157 5/16	70 1/16	93 7/16
251B	V	4	16-9x10½	10688	13.00	2600-2700	2400-2500	Yes	42000	197 7/16	70 1/16	99 3/16
539	I	4	6-12½x13	9572	12.50	1000-1500	700-1000	Yes	34800	191	67 1/16	97
Cooper-Bessemer FWB-6-LT	I	4	6-9x10½	4008	12.70	990-1000	990-1000	Yes	22000	134	59 3/16	80 1/16
FWB-8-LT	I	4	8-9x10½	5344	12.70	1320-1000	1310-1000	Yes	25000	164	59 7/16	80 1/16
FVBL-8-T	V	4	8-9x10½	5344	12.70	1320-1000	1310-1000	Yes	21500	102 1/16	60	75 5/16
FVBL-12-T	V	4	12-9x10½	8016	12.70	1980-1000	1975-1000	Yes	28500	133 1/16	60	75 5/16
FVBL-16-T	V	4	16-9x10½	10688	12.70	2640-1000	2630-1000	Yes	35000	166 1/16	60	75 5/16
Electro-Motive 8-567C	V	2	8-8½x10	4536	16.10	.....	† 900- 835	No*	18000	139 7/16	62 1/16	92 1/16
12-567C	V	2	12-8½x10	6804	16.10	.....	†1200- 800	No*	25000	174 7/16	64 1/16	90 11/16
16-567C	V	2	16-8½x10	9072	16.10	.....	†1750- 835	No*	32000	212 1/16	62 1/16	88 11/16
Fairbanks-Morse 6-38D8 1/8	O	2	6-8 1/8x10	6221	16.10	1290- 850	1290- 850	No	26099	171 7/16	60	107 1/16
8-38D8 1/8	O	2	8-8 1/8x10	8295	16.10	1720- 850	1720- 850	No	33000	200 3/16	67	108 1/16
10-38D8 1/8	O	2	10-8 1/8x10	10369	16.10	2150- 850	2150- 850	No	38580	227 3/16	67	108 1/16
12-38D8 1/8	O	2	12-8 1/8x10	12443	16.10	2580- 850	2580- 850	No	44910	260 1/16	67	108 1/16
10-39F5 1/4	O	2	10-5¼x7¼	3139	15.00	825-1200	825-1200	No	13200	157 5/16	42 1/16	74 5/16

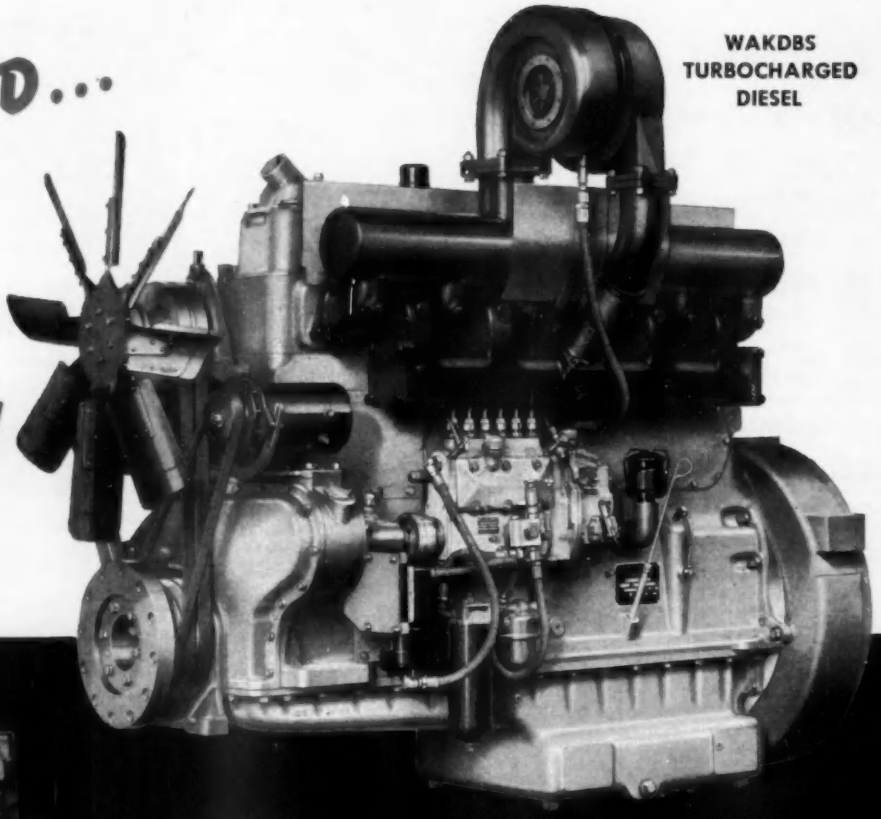
ABBREVIATIONS

†—Horsepower available for traction.
*—Engine has Roots type blower for scavenging use only; not supercharged.
I—In line.
O—Opposed piston.
V—"V" type engine.

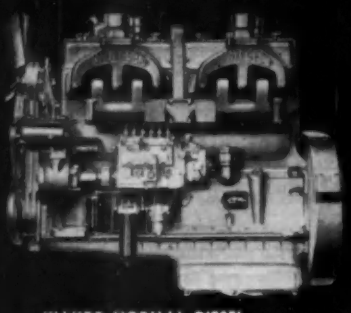
For Directory of the Engine Manufacturers listed above, see Table of Contents

OVER THE ROAD... OR OFF THE HIGHWAY

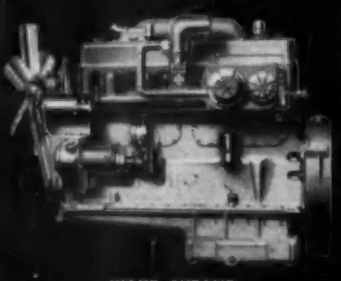
WAKDBS TURBOCHARGED DIESEL



WAKDB NORMAL DIESEL



WAKR BUTANE



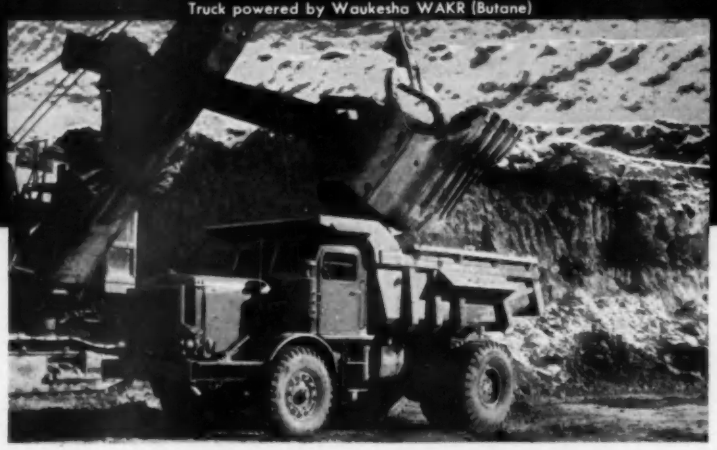
WAUKESHA

EXTRA HEAVY DUTY

Standard or Counterbalanced Crankshafts

up to 352 horsepower

Truck powered by Waukesha WAKR (Butane)



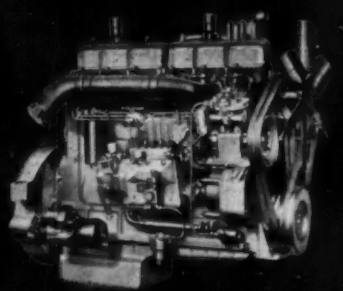
THE PAYLOAD POWER PLANT

- **fast**
- **smooth**
- **powerful**

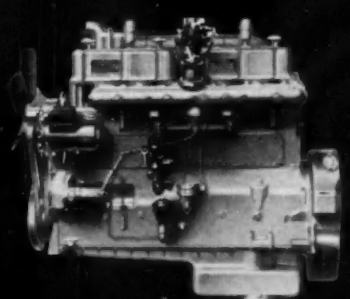
MODEL	Cyl.	*Features	Bore and Stroke	Displ. Cu. In.	Max. Torque @ RPM	Max. HP	RPM
TURBO-SUPERCHARGED DIESELS							
197-DLCS	6	AT	4 x4	320	280-2000	131	2800
135-DKBS	6	ACTV	4¼x5	426	400-1800	185	2800
148-DKBS	6	ACTV	5¼x6	779	706-1800	280	2100
WAKDBS	6	ACTV	6¼x6½	1197	1062-1600	352	1800
NORMAL DIESELS							
180-DLC	4	AC	3½x3¾	144	102-1800	45	2400
185-DLC	6	A	3½x3¾	216	152-1200	60	2400
190-DLCA	6	AC	3¾x4	265	191-1400	85	2800
195-DLCA	6	AC	4 x4	302	221-1800	98	2800
135-DKB	6	ACV	4¼x5	426	328-1600	147	2800
148-DKB	6	ACV	5¼x6	779	584-1000	200	2100
WAKDB	6	ACV	6¼x6½	1197	845-1000	258	1800
GASOLINE							
180-GLB	4	AC	3½x3¾	144	118-1600	45	2400
185-GLB	6	A	3½x3¾	216	176-1400	67	2400
190-GLB	6	A	3¾x4	265	220-1200	77	2400
195-GKA	6	ACV	4¼x4	320	243-1600	122	3000†
MZA	6	A	4¼x4¾	404	289-1000	128	2800†
135-GKB	6	ACV	4¼x5	426	337-1200	147	2800†
135-GZB	6	ACV	4⅜x5	451	354-1200	153	2800†
140-GKB	6	ACV	4½x5½	525	425-1000	177	2600†
140-GZB	6	ACV	4⅝x5½	554	448-1100	188	2600†
145-GKB	6	ACV	5¼x6	779	595-1000	240	2400†
145-GZB	6	ACV	5⅜x6	817	630-1100	250	2400†
WAKB	6	ACV	6¼x6½	1197	1000-1000	280	1800

***FEATURES:** A—Aluminum Alloy Pistons; C—Counterbalanced Crankshaft; T—Turbo-Supercharged; V—Vibration Dampener.

†*These engines rated at higher hp and rpm for fire engine service. Send for Bulletin 1079 for LPG ratings and complete listing of engine hp and speed ratings.*



148-DKB NORMAL DIESEL



145-GKB GASOLINE

ENGINES

NORMAL and TURBOCHARGED DIESELS
. . . GASOLINE . . . LP GAS

Write for descriptive bulletins

Truck powered by Waukesha 148-DKB Normal Diesel

334

WAUKESHA MOTOR COMPANY
Waukesha, Wisconsin
New York Tulsa Los Angeles

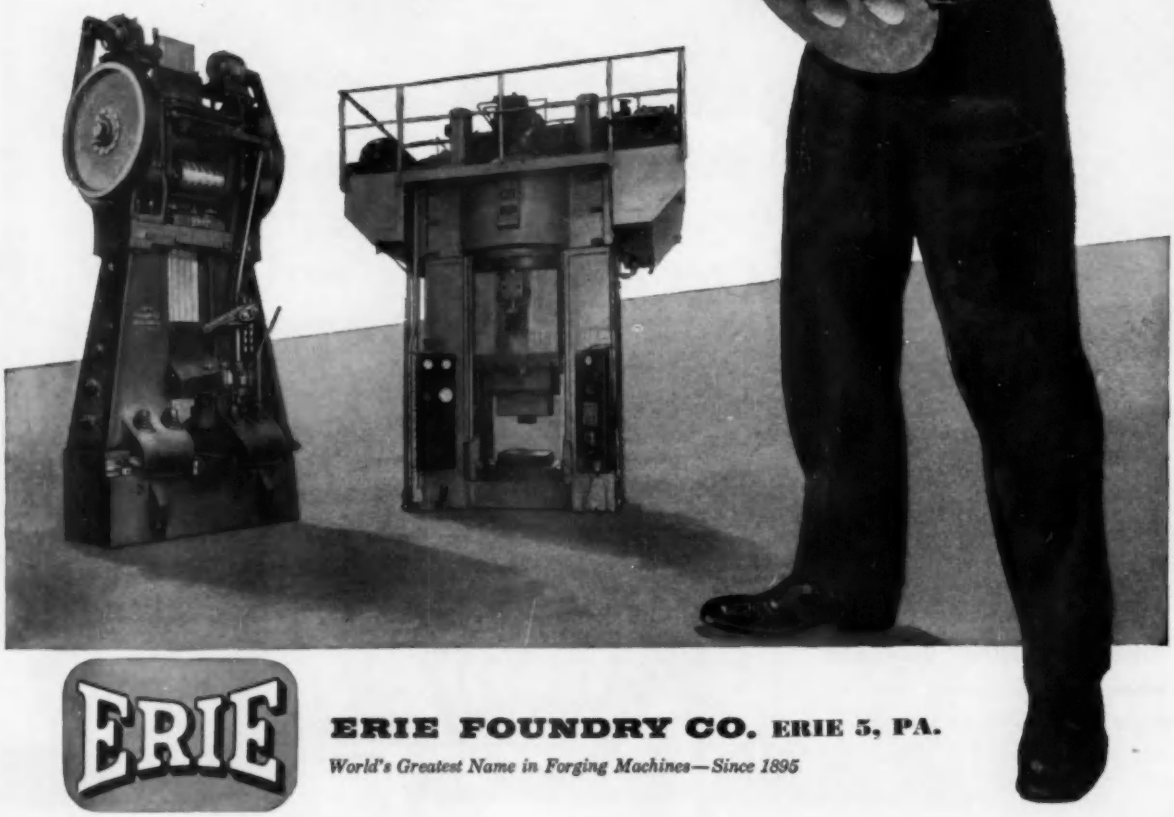
Hammer or Press.....

which is best for your forged product?

Hammers forge some pieces more efficiently than presses; presses work some forgings better than hammers. What is a forging man to do? Easy! Talk with the firm that makes the best in both hammers and presses . . . talk with Erie Foundry Company. We will help you with expert specific advice on the right machine for your forging requirements.

In one instance, Eaton Manufacturing Company's (Marion, Ohio) forge plant decided on this Erie 10,000-lb. Board Drop Hammer to forge 68-lb net flat-back ring gears, 16″ in diameter—in a single impression die, straight down, without blocking or pancaking. And, in another instance, Kaiser Aluminum's (Erie, Pa.) forge plant decided to use this Erie Foundry Hydraulic Forging Press with electromagnetic controls, to produce in quantity, their no-draft forgings.

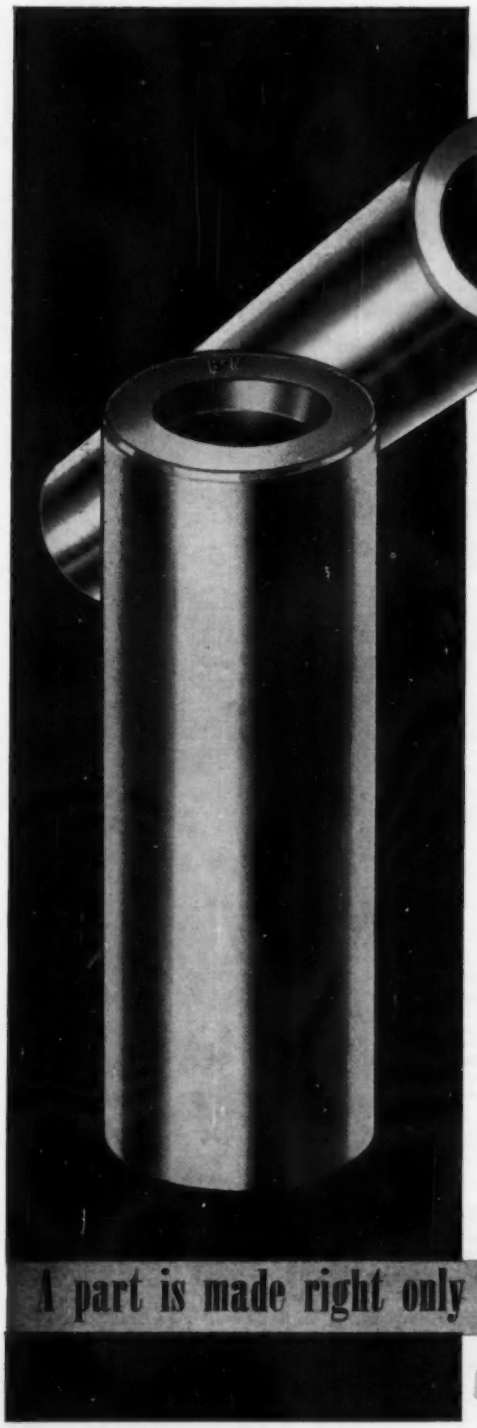
Which is best for you—hammer or press? Talk to the recognized leader . . . Erie Foundry Co. Just call or write.



ERIE

ERIE FOUNDRY CO. ERIE 5, PA.

World's Greatest Name in Forging Machines—Since 1895



* B-N.....your assurance of finer piston pin performance

The Burgess-Norton insignia symbolizes
the engineering and production skill that guarantees
better performance for industry.
Throughout the years
the engineering, metallurgy and production facilities
at Burgess-Norton have kept pace
with the ever-increasing demands for quality parts.
Ability to meet these requirements as to
production and quality has made Burgess-Norton
the world's largest independent producer of piston pins.
Burgess-Norton is proud of its position . . .
and with it accepts the responsibility
to maintain constant vigilance in quality control,
and makes available to industry the latest
in manufacturing facilities and methods.

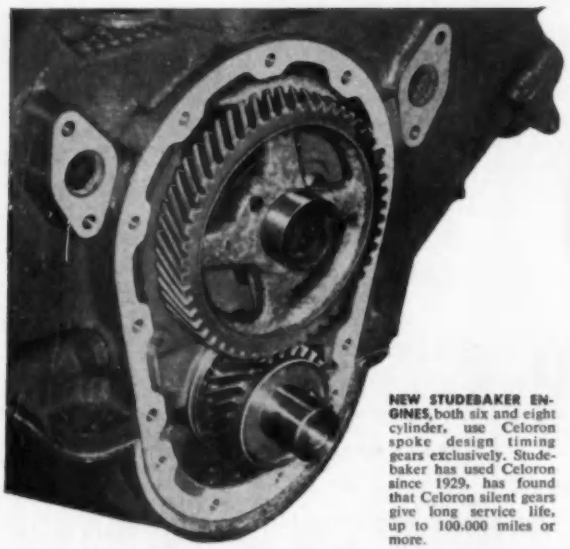
A part is made right only when it is satisfactory to our customer

Burgess Norton Mfg. Co.
GENEVA, ILLINOIS

SERVING INDUSTRY FOR OVER FIFTY YEARS

engineering design

CELORON®



NEW STUDEBAKER ENGINES, both six and eight cylinder, use Celoron spoke design timing gears exclusively. Studebaker has used Celoron since 1929, has found that Celoron silent gears give long service life, up to 100,000 miles or more.

by John A. Petho, Development Engineer
Celoron Division, Continental-Diamond Fibre Division of
The Budd Company, Inc.
Bridgeport, Pa.

The basic requirements for automotive timing gears are smooth transmission of power, quietness and reasonable service life. Depending on the installation these requirements will have varying degrees of importance which can be controlled to a large extent by the selection of the material, design, and quality of workmanship.

Material and design are closely related, but only too frequently changes in the powerplant have been made without corresponding changes in design and material. For this reason, a brief review is given of the design advantages of Celoron, a cotton fabric-based gear material, and of Celoron laminated rim timing gears.

WHAT IS CELORON?

It is the trademarked name of over 30 years standing for a laminated or macerated molded industrial plastic made only by C-D-F for a wide range of gear and mechanical and electrical insulation needs. It designates one of the best, if not the best, high impact molded fabric phenolics for mechanical applications. For timing gears, a phenolic type resin bonds the laminated and macerated cotton fabric into a blank that has the required mechanical strengths. Over the years, we have learned the importance of selecting cotton fabric with the proper weave and weight. Consequently, the design engineer has been given a gear with greater strength, less and more uniform tooth wear, quieter operation.

TYPES OF GEARS MADE FROM CELORON

For original equipment, the laminated rim construction has become standard with two types of construction between the rim and the hub. The gears can be light, medium or heavy duty types. The weight of the fabric used for the gear rim is controlled by the DP of the gear. The WEB gear offers a quality gear with the least possible finishing. The SPOKE gear incorporates many fundamental principles of design long used for quieter operation and longer life. The spokes absorb most of the critical vibrations, have greater resilience and flexibility. However costs are slightly higher.

COMPARATIVE AVERAGE PROPERTIES

	Laminated (rim)	Macerated (web or spoke)
Tensile Strength, psi	10,000	6,500
Flexural Strength, psi	20,000	10,000
Compressive Strength, psi	38,000	25,000
Shearing Strength, psi	12,000	8,500
Izod Impact Strength, flatwise (Notched in ft. lbs. per 1" of notch)	4.0	2.3

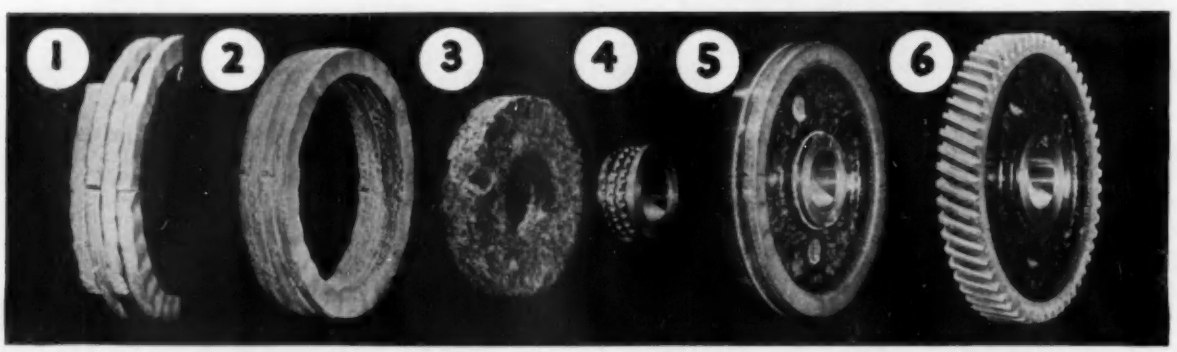
UNIFORM TOOTH STRENGTH

The segments forming the gear rim are punched in such a way that the stronger direction of the fabric is used to form the flank of the gear tooth. This results in a stronger, uniform gear.

WEB FLEXIBILITY

To mold a non-uniform cross section web, laminated construction cannot be used. The treated canvas is macerated to permit shape molding. An important factor of web strength is the size of the particles used. Too large or too small particles will reduce the strength and influence the moldability of the gear. It is necessary to control the weight of each cake of macerated material, assuring a better quality gear.

The molding of the gear web permits the designer to introduce various degrees of flexibility to the gear. In some helical gear installations the service life of the gear can be directly related to flexibility. This is a problem which can be best solved by experience, knowledge of the material and complete knowledge of requirements of the installation. Unfortunately, all these factors are very seldom at the command of the gear designer.



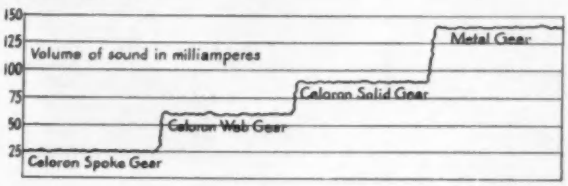
HERE IS HOW a Celoron gear gets its higher tooth strength, more flexibility, greater impact resistance: 1. A special grade of tough cotton is coated with phenolic varnish, then cut into strips and punched into segments. 2. These segments are staggered and piled up into the outer rim which will become the gear teeth. 3. The web or inner ring is made of macerated cloth —gives the gear its side flexibility. 4. The metal bushing is inserted and the make-up is put in to the mold. 5. The resin softens, the coated fabric flows and fills the mold. On hardening, a strong Celoron gear blank is produced. 6. Teeth are then cut in the laminated rim. Tests show they have higher impact strength and more resistance to wear!

advantages of C-D-F LAMINATED RIM

TIMING GEARS

SOUND HARMONICS OF CELORON

There is no mechanical motion without friction. Friction develops vibrations which are in turn transmitted to the air, thereby producing noise. As all sound is characterized by waves of definite frequency and amplitude, these characteristics of frequency and amplitude enter into a consideration of gear noise. Frequency of a gear noise is determined by the number of tooth contacts per second.



Amplitude of a gear noise is the result of a number of factors, such as the material and shape of the gear and gear housing.

Celoron has a natural low tone frequency and design changes in the structure of the web further reduces the tendency of noise pickup. With a spoke design, it is possible to break up the continuous line of sound between the hub and rim, practically eliminating the pickup and amplification of sound.

HORSEPOWER RATING OF CELORON

Because Celoron is a non-metallic material, when calculating the horsepower rating of Celoron timing gears, use this modification in the velocity factor of the Lewis Formula.

$$\text{Velocity factor} = \frac{150}{200+v} + .25$$

$$\text{SWS} = 6000 \times \frac{150}{200+v} + .25$$

$$\text{HP} = \frac{0.000095 \times \text{SWS} \times \text{FW} \times Y \times \text{PLV}}{\text{DP}}$$

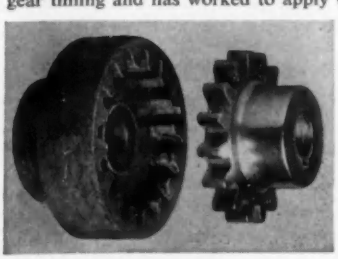
This formula, adopted by the American Gear Manufacturers Association, takes into consideration the characteristics of Celoron. Results obtained in service have supported its use.

POSITIVE KEYING

Celoron which basically belongs to the plastic family has one of the disadvantages of plastics which is a limited amount of compressibility or plastic flow when subjected to a continuous load such as exists at the keyways. To overcome this characteristic and to distribute the loads at the keyway, a steel bushing is molded in the Celoron gears for the bore and the keyway. The steel bushing is anchored to the Celoron, in the molding operation, with staggered interrupted splines instead of the customary diamond knurls. This method is a C-D-F development.

GEARS VERSUS CHAINS

It would be presumptuous of me to set down all the pros and cons of this engineering tug-of war. C-D-F naturally believes in gear timing and has worked to apply Celoron to its fullest use.



CELORON FLEXIBLE COUPLINGS are designed for horizontal as well as vertical drives. The female end of the sprocket type coupling is molded of macerated Celoron which transmits power smoothly and quietly. Write for folder CS-53 with design-ordering information.

Here are a few random quotes, not from plastics engineers, but from automotive design engineers:

"Our experience indicates that timing gears are extremely satisfactory. Probably one of the problems in satisfactory timing gear life is associated with crankshaft stiffness and the fact that the V-8 engine has a relatively short rigid shaft makes a timing gear ideal for this type of engine."

ANOTHER INTERESTING ONE: "From a cost standpoint the gear drive is less expensive than the timing chain drive."

AND ANOTHER: "Even the shortest camshaft drive chains consist of approximately 450 parts. Each of these parts is subject to wear. It is evident that even the slightest trace of wear on each individual part will add up to quite an imposing total for the entire chain. A gear drive for a camshaft has only two parts to wear. Even then the wear is distributed over the entire tooth width instead of being localized."

C-D-F laminated rim Celoron web gears with metal gear.

SUMMARY ON CELORON

The foregoing are a few of the points which make Celoron a desirable material for automotive timing gear applications. There are many more from a cost and customer service standpoint. The material is being continually improved and in its 30 years of existence the only thing remaining of the original material is the name of Celoron. New resins, new fabrics, new methods of molding have made Celoron stronger and lower priced. Semi-automatic molding operations provide open capacity for supplying Celoron. Plant capacity has been steadily increased each year since 1946.

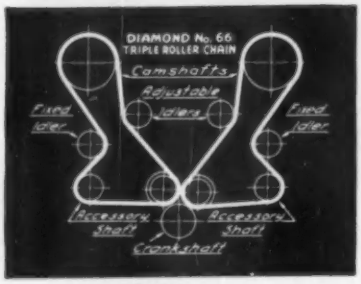
However, all the good inherent properties of Celoron can be destroyed by faulty design. It is always a good policy to discuss the design problems with the manufacturer of the material. Write for test data and samples. C-D-F wants to help you, is a big reliable source of supply!

CDF CONTINENTAL-DIAMOND FIBRE

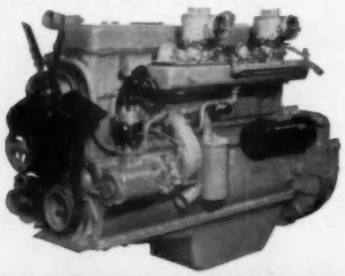
A SUBSIDIARY OF THE BUDD COMPANY • NEWARK 2, DELAWARE

FOR BETTER PERFORMANCE—AND ECONOMY
DIAMOND ROLLER CHAINS

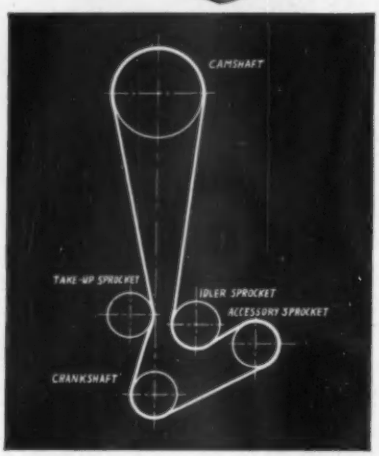
TIMING AND AUXILIARY ENGINE DRIVES

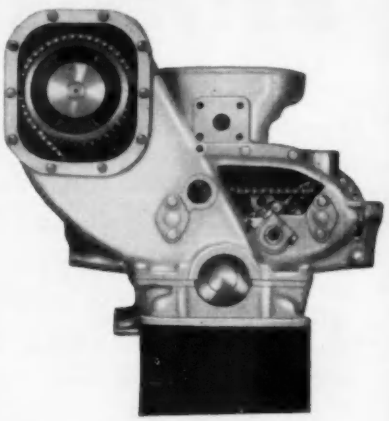


The new Hall-Scott 590 six cylinder truck engine, available for gasoline or LPG, delivers over 200 horsepower, weighs less than 1,300 pounds and is under 50 inches in overall length. 182 pitches of Diamond No. 82 quadruple-strand Roller Chain drive the overhead camshaft as shown below.

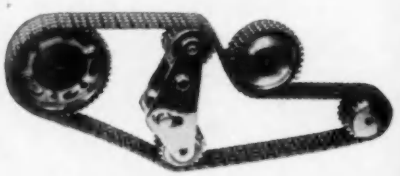


On the Cooper-Bessemer L.S.V. Engine, Diamond No. 470 quadruple Chain is installed from the timing drive camshaft to intermediate shaft and Diamond No. 148 for the auxiliary drive.





Hercules Diesel engine D00 four cylinder and gas engine QXLD-3 six cylinder have:—Diamond Double No. 66 Roller Chain from crankshaft to pump shaft. Single No. 66 for fuel oil pump drive.



Twin Coach buses and Super Freighters are powered by Fageol engines (gasoline or propane) equipped with Diamond Chain Quad #82 Roller Chain timing drives.

• For over a quarter century the use of Diamond Roller Chains has included many applications on all types of engines: — gas, gasoline, diesel and dual-fuel up to 5000 h.p. and at speeds as high as 10,000 r.p.m. in stationary, marine and land transportation service. Wide usage has demonstrated their unmatched long-life reliability, high maintained efficiency and smoothness of operation. Efficiency remains practically the same throughout long service. The finish of working surfaces improves with scarcely measurable wear.

And These Definite Diamond Advantages

1. Adaptability to wide range of shaft centers, speeds, and ratios.
2. Drive from either face.
3. Create no end play.
4. Make close shaft centers and clearance tolerances unnecessary.
5. Quiet when installed — Remain quiet.
6. Low in first and final cost.

DIAMOND CHAIN COMPANY, Inc.
626 Kentucky Avenue, Indianapolis 7, Indiana

Diamond Engineers offer complete design and application service.

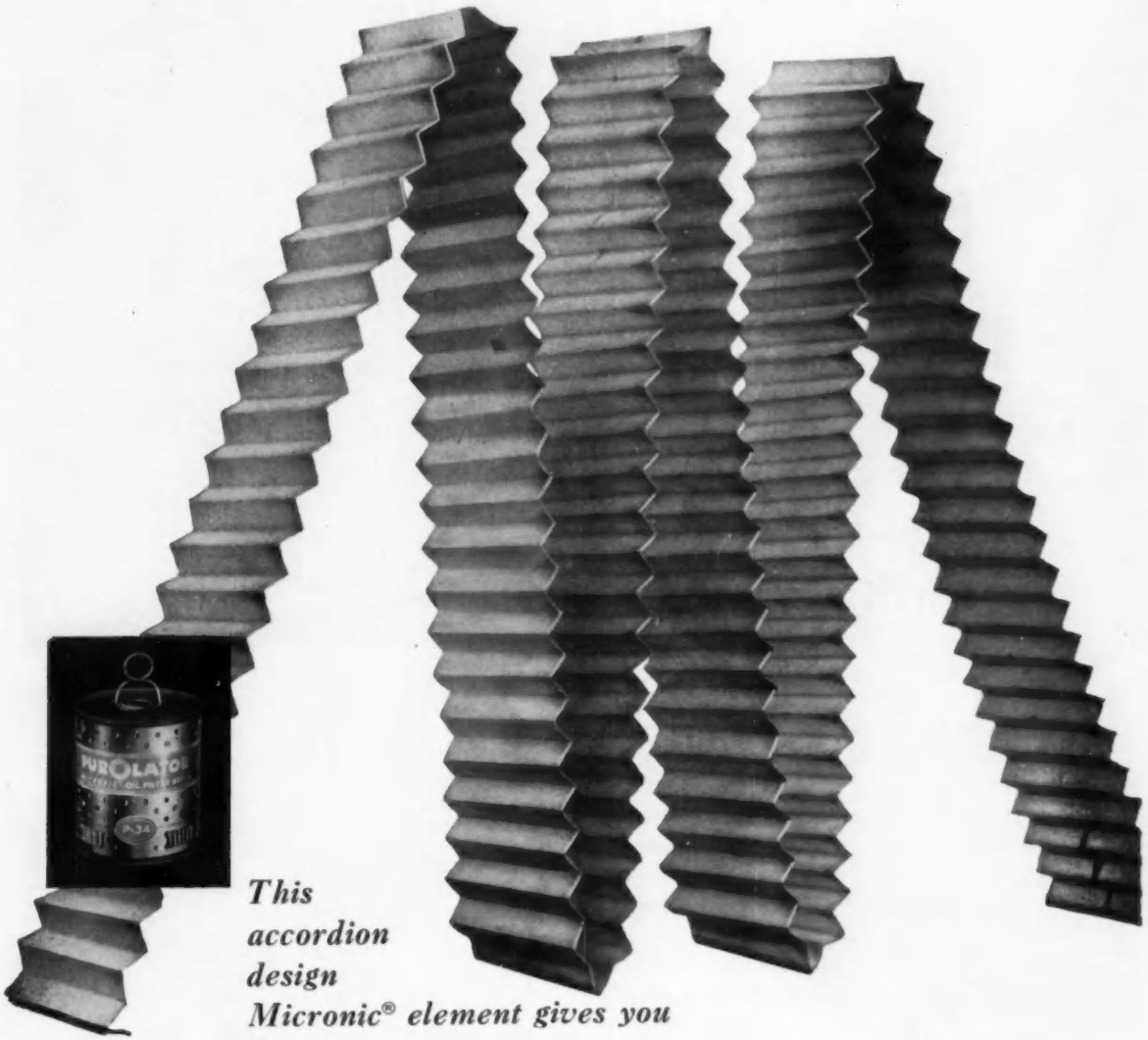
ALWAYS PRELOADED

For many, many years, Diamond Chain has been preloaded after assembly for the purpose of bringing pin-bushing seating into stabilized relationship prior to field installation.

SHOT-PEENIN SINCE 1944

Diamond Chain has lor recognized that certa types of internal stressin of chain parts would in crease fatigue resistance To this end, link plates hav been specially processed and chain rollers and othe parts have been shot-peened since 1944.

DIAMOND ROLLER CHAINS



This accordion design Micronic® element gives you

10 times more filtration area for full engine protection

Pull out Purolator's accordion design and you'll see how Purolator packs 10 times more filtration area into its element than most filters. You'll find it provides maximum filtering area in minimum space, assuring *full* engine protection as no other filter does.

Controlled porosity of Purolator's Micronic® element filters out particles as small as .000039 of an inch, yet never removes costly additives in heavy-duty or detergent oils and never channels. The Micronic® element, made of plastic-impregnated cellulose, isn't affected by engine temperature, crankcase dilution, or water.

Engine manufacturers have proved time and time again that these wear-reducing features make an engine perform better and last longer. Find out how they can do the same job for you. Write for our new 32-page "Filtration Manual for Product Designers"—and please enclose 25¢ to cover postage and handling. Address Dept. A4-316.

Filtration For Every Known Fluid

PUROLATOR

PRODUCTS, INC.

Rahway, New Jersey and Toronto, Ontario, Canada

bly for the purpose of bringing pin-bushing seating into stabilized relationship prior to field installation.

DIAMOND CHAINS

crease fatigue resistance. To this end, link plates have been specially processed and chain rollers and other parts have been shot-peened since 1944

insist on frenchtown insulators

...heart of the spark plug!

Year after year, more than 12,000,000 spark plug insulators are shipped from the kilns at FRENCHTOWN to spark plug manufacturers all over the nation.

As the world's largest *independent* producer of spark plug porcelains since 1914, there are many reasons for the widespread acceptance of FRENCHTOWN products. Quality control is one.

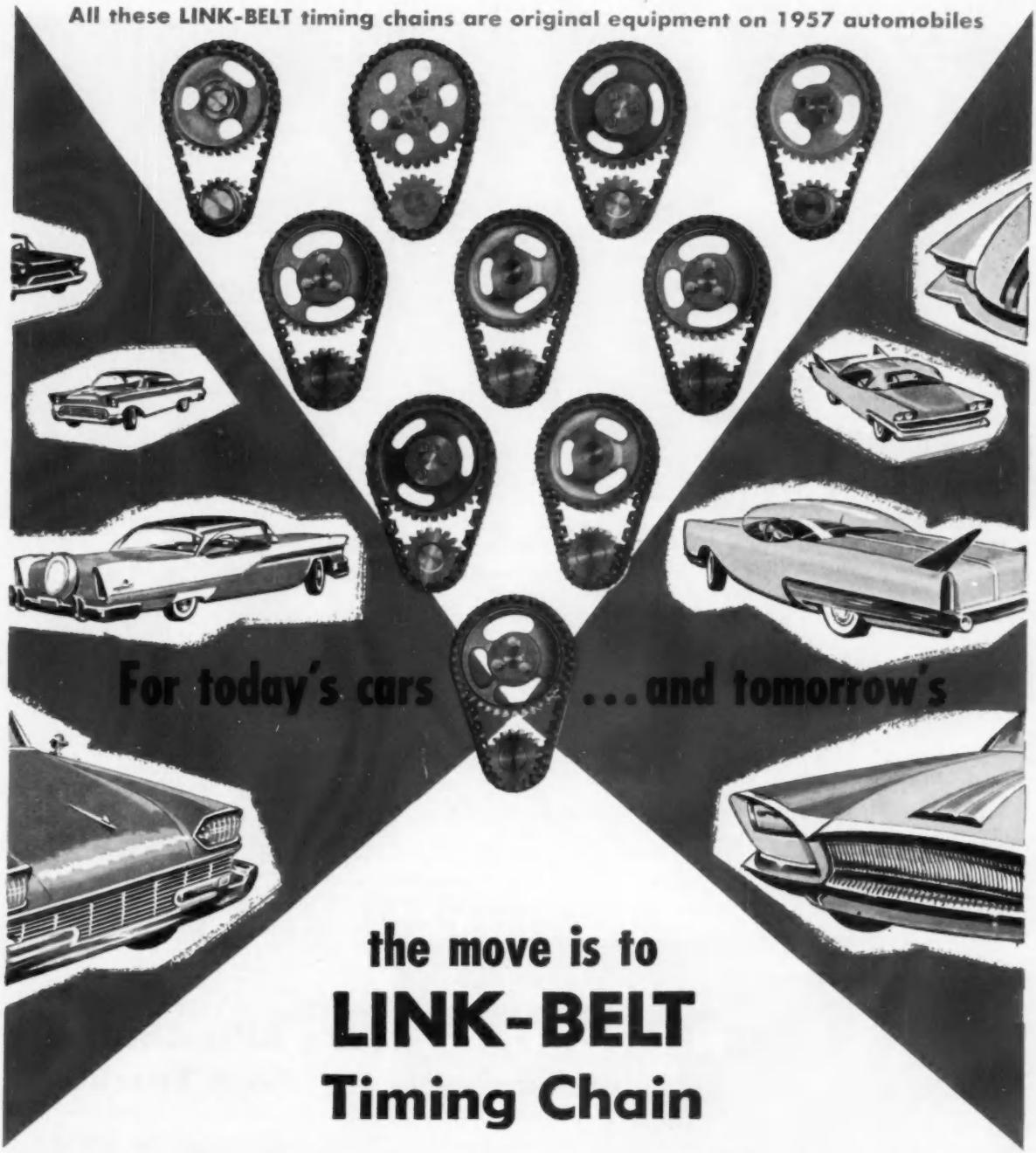
For example, *every* FRENCHTOWN insulator is subjected to a rigid dielectric test (30,000 volts at 1.5 megacycles) . . . *every* insulator must pass an exacting surface inspection before and after glazing. These and other quality control measures which extend throughout all manufacturing processes help give FRENCHTOWN porcelain products the excellent dielectric and mechanical strength so essential in high voltage insulation.

Your best assurance of customer satisfaction is to be sure that the spark plugs you make are made with FRENCHTOWN insulators. They are used by more spark plug manufacturers than those of any other independent maker of insulators.

frenchtown PORCELAIN COMPANY

81 MUIRHEAD AVENUE | TRENTON 9, NEW JERSEY

All these LINK-BELT timing chains are original equipment on 1957 automobiles



the move is to LINK-BELT Timing Chain

PRECISION-PRODUCED . . . pre-tested by automotive industry standards—Link-Belt timing chain has won a new high in acceptance on 1957 automobiles. For tomorrow's cars, too, designers are looking to Link-Belt to maintain more miles of factory-engineered timing . . . to satisfy the increased requirements of higher horsepowers.

Among the reasons for this growing preference: Link-Belt offers segmental bushings for automatic joint snugness, with no "slap" on the non-load side. Built-in check in joints permits forward articulation for sprocket contact without back-bend and whip. And Link-Belt's link-and-tooth form eliminates chordal action for smoother, longer-lasting performance.

Link-Belt can apply 45 years of engineering experience and facilities of the world's largest chain plant to furnish a test drive to your specifications. Write for data Book 2065. 14,498

LINK-BELT

TIMING CHAINS AND SPROCKETS

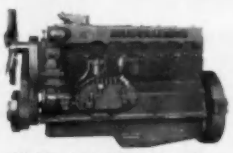
LINK-BELT COMPANY: 220 South Belmont Ave., Indianapolis 6, Ind.

For Economical POWER . . . It's Allis-Chalmers Engines

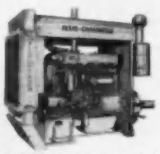
9 to 516 hp — diesel, gasoline, natural or LP gas

Your equipment will operate at lower over-all cost and with less maintenance when powered with Allis-Chalmers engines. They are conservatively rated for long life and dependability — have high average torque and more usable horsepower.

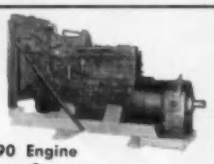
Investigate their advantages and performance records. Find out how an Allis-Chalmers engine makes good equipment even better.



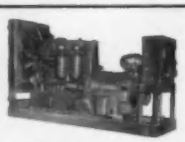
8DAS-1125 Diesel Engine



6DA-779 Power Unit



6DAS-1290 Engine with Torque Converter



Generating sets 5 to 300 kw

Fork Trucks, 2,000 to 8,000-lb — diesel, gas, gasoline. Also Platform Trucks, 2,000 and 3,500-lb models and Industrial Tractors, 2,400 to 13,000-lb drawbar pull.

For Economical HANDLING . . . It's Allis-Chalmers Fork Trucks

Allis-Chalmers Fork Trucks are noted for their performance ability, operating ease and ability to work thousands of hours without major attention. There is a complete range of models with attachments to fit the need, either conventional or torque converter drive, and solid, cushion or pneumatic tires. Get all the facts from your Allis-Chalmers material handling dealer.

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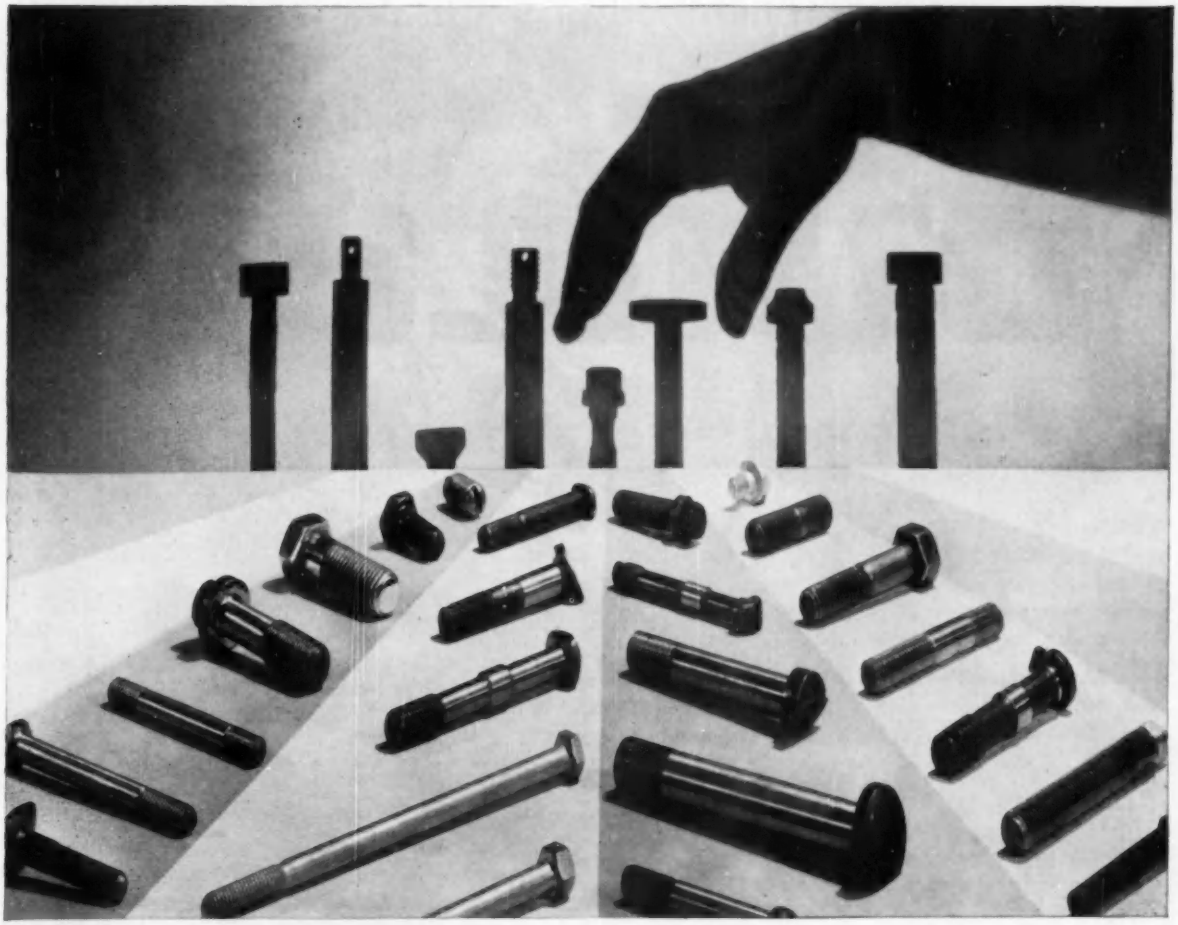


IMPROVE DESIGN . . . *get assistance*

from Ferry Cap—fastener experts for 50 years

Often we can suggest a fastener of special shape that will reduce your over-all product costs. Sometimes these special screws eliminate parts, replace more expensive parts, or reduce assembly time. Frequently they improve product performance. In all cases, Ferry Cap customers get the benefit.

Give us a call and have a talk with one of our "Fastener Engineers."

THE FERRY CAP & SET SCREW COMPANY

Makers of the famous Countr-Bor® Screw for socket head applications.

2191 SCRANTON ROAD • CLEVELAND 13, OHIO

FERRY CAP *is geared to FASTER SERVICE*

The most imitated piston in the world

Another **FIRST** *for*

DUALOY

APPLIED ENGINEERING GIVES DUALOY PISTONS

a **1 2** *punch*

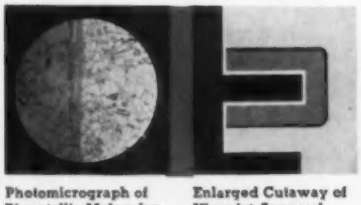
NOW... to prevent head-burning in single injection fuel systems, DUALOY integrally casts a "hot-spot" in the piston head as a reinforced extension of the armored ring-band carrier.

THE "HOT-SPOT" PISTON

The design principle of integrally casting and molecularly bonding a wear resistant armored ring carrier of niresist iron into the body of an aluminum piston was developed and introduced with DUALOY pistons.

Many manufacturers of heavy duty pistons have since adopted this practice as standard design to meet the operating and service requirements of high-compression, high temperature engines.

We solicit the opportunity to show you how special designed DUALOY pistons can improve the operation and performance standards of your heavy-duty engines.



Photomicrograph of Bi-metallic Molecular Bond

Enlarged Cutaway of Ni-resist Armored Ring Band

UNITED ENGINE & MACHINE COMPANY

312 PREDA STREET · SAN LEANDRO, CALIFORNIA

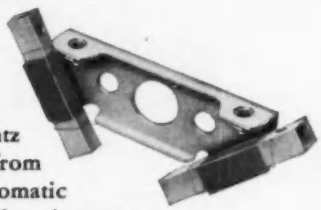
SILV-O-LITE

BETTER PISTONS SINCE 1922

DUALOY

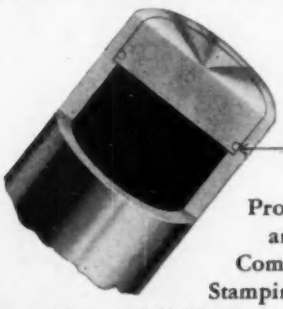
7 WAYS to SAVE MONEY with TOCCO* Induction Brazing

1



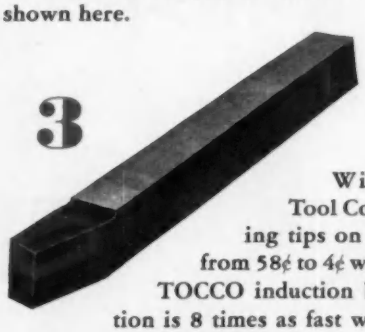
$15.84 per hour was saved by Jack & Heintz when they switched from torch brazing to automatic induction brazing of these inverter brush mounts. TOCCO brazing also upped production from 40 to 360 brazed assemblies per hour.

2



Production was doubled and cost cut 50% when Commercial Shearing and Stamping Company changed from welding to TOCCO induction brazing of these hydraulic cylinder assemblies. Heating time was cut from 15.3 minutes to 2 minutes on 5¼" cylinder shown here.

3



Willey's Carbide Tool Co. cut cost of brazing tips on large lathe tools from 58¢ to 4¢ when they adopted TOCCO induction brazing. Production is 8 times as fast with TOCCO—85 per hour, against 80 per day produced by a former method.

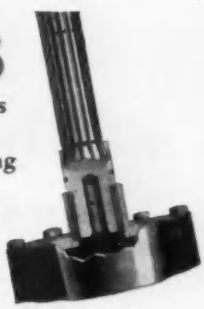
4

Formerly, Norris Thermador Corporation used arc welding to join this bushing and clamp. The change to TOCCO induction brazing reduced their costs 32%—from $46.44 to $31.73 per thousand parts.

5

When Mechanics Universal Joint Division of Borg-Warner shifted from welding to TOCCO induction brazing of this drive shaft assembly, they reduced the cost of the operation 67%. At the same time automatic TOCCO increased production from 11 to 45 pieces per hour—400% faster than the former method.

6



Packard engineers saved $1.74 per part when this automatic transmission shaft was redesigned from a forging to a steel shaft and casting, permitting the use of TOCCO induction brazing. In addition to this per part saving, $74,325 was saved in equipment and tooling.

7 Number 7—the lucky number—is up to you. Why not add your name to the list of companies who use TOCCO Induction Heating to increase production, improve products and lower costs. TOCCO engineers are ready to survey your plant for smililarly money-saving results—without obligation, of course.

THE OHIO CRANKSHAFT COMPANY

TOCCO

*Trade Mark Reg. U. S. Pat. Off.

Mail Coupon Today

NEW FREE BULLETIN

THE OHIO CRANKSHAFT CO.
Dept. H-3, Cleveland 5, Ohio

Please send copy of "Typical Results of TOCCO Induction Brazing and Soldering."

Name_____

Position_____

Company_____

Address_____

City_____ Zone____ State_____

Save horsepower at both ends

DONALDSON AIR CLEANERS and MUFFLERS

Cleaner air for combustion and less exhaust back pressure give you better performing engines that deliver full rated horsepower *longer*.

The truck shown above, operates both over the road and off the highway. Severe dust conditions are often encountered, but the Donaldson cleaner delivers dust-free air to the engine at all times, removing the cause of most wear.

At the other end of the combustion cycle a Donaldson muffler discharges exhaust gases with a low, pleasing tone . . . without harmful back pressure. The engine delivers full power on less fuel *and with less valve wear*.

Test the performance of your engine with a Donaldson air cleaner and muffler. Many leading manufacturers have found that by "going Donaldson all the way," they build customer satisfaction through better engine performance.

Donaldson

DONALDSON COMPANY, INC.

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St. Paul, Minnesota

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CONSTRUCTION MACHINERY

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DIRECTORY OF MANUFACTURERS

39th

ANNUAL STATISTICAL ISSUE 1957

AUTOMOTIVE INDUSTRIES

Grinds 33% faster

...increases wheel life

● *More power per pound* is the reason why the new *Rotor B-7 Vertical Grinder* does jobs faster. *Application:* Grinding flash and parting lines on cast machine parts. Replaced flexible shaft grinders. *Result:* Boosted output 33%. Savings will pay for the new *Rotor B-7 Vertical Grinders* in 17½ weeks. Operator fatigue is less. Wheels last longer. Downtime now nil.

The nearby Rotor Application Engineer will demonstrate these or other new Rotor Tools on *your* jobs. Write for Bulletin 56 on Rotor Vertical Grinders. The ROTOR TOOL Company, Cleveland 32, Ohio.

Here's the Right TOOL for YOUR job!

Rotor Air Tools: Assembly Tools • Drills • Small Wheel Grinders
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ROTOR TOOLS®
CLEVELAND, OHIO

Significant Economic Indicators

Growth of the U.S.A., 1946-1956

All data are from the Economic Report of the President.

	1946	1956	% Change 1946 – 1956
MORE PEOPLE			
Population	141,389,000	168,091,000	+19%
Birth Rate (Per 1,000 population)	24.1	25.1	+ 4%
Death Rate (Per 1,000 population)	10.0	9.4	– 6%
Infant Mortality (Per 1,000 live births)	33.8	26.0	–23%
GREATER EMPLOYMENT			
Labor Force	57,520,000	67,530,000	+17%
Total Employment	55,250,000	64,979,000	+17%
Unemployment as percent of Labor Force	3.9%	3.8%	– 3%
Consumer Prices (Index 1947 – 1949 = 100)	83.4	116.1	+35%
INCREASED EARNINGS			
In Manufacturing—			
Average Gross Hourly Earnings	$1.086	$1.980	+83%
Average Gross Weekly Earnings	$43.82	$80.13	+83%
Average Net Spendable Weekly Earnings*	$43.20	$73.33	+70%
Average Family Personal Income			
Before Taxes	$3,940	$5,520	+40%
After Taxes	$3,720	$4,980	+34%
SHIFTS IN INCOME			
Distribution of Families by Income Groups			
Under $2000, before Taxes	11,400,000	8,300,000	–27%
Under $5000, before Taxes	28,800,000	21,600,000	–25%
$5,000 and over, before Taxes	9,100,000	23,000,000	+153%
Distribution of Personal Income Disbursements			
By Labor	69.6%	75.8%	+ 9%
By Farmers	7.7%	3.5%	–55%
By Business and Professional	11.8%	8.8%	–26%
By Investors	10.9%	11.8%	+ 8%
FAMILY OWNERS OF HOMES AND CARS			
Homes	21,300,000	29,300,000	+37%
Automobiles	23,000,000	37,000,000	+61%
ACCESSORIES IN HOMES			
Television Sets	.....	38,400,000	.....
Electric Refrigerators	21,400,000	45,500,000	+113%
Electric Freezers	.....	8,600,000	.....
Vacuum Cleaners	15,100,000	31,600,000	+109%
Electric Washers	18,800,000	41,200,000	+119%
Air Conditioners	100,000	3,600,000	.....
PROVISIONS FOR FUTURE			
Time Deposits	$49,600,000,000	$74,700,000,000	+ 51%
Savings and Loan Shares	$8,500,000,000	$37,000,000,000	+335%
Life Insurance per Family	$3,600	$7,500	+108%
Workers under O. A. S. I.	33,300,000	54,000,000	+ 62%
Persons with Hospital Insurance	42,100,000	112,000,000	+166%
Persons with Medical Insurance	6,400,000	63,000,000	+884%

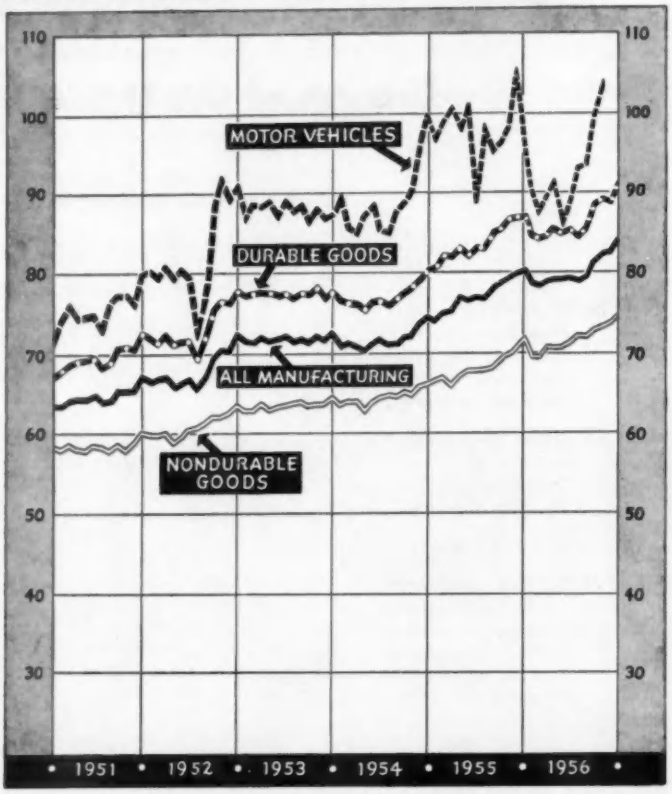
*—Worker with three dependents. Less Social Security and Income Taxes.

WAGES

EARNINGS OF PRODUCTION WORKERS— BUREAU OF LABOR STATISTICS

	Average Earnings Hourly	Average Earnings Weekly	Real Weekly Earnings‡	Average Hrs. per Week
All Manufacturing				
1956				
Jan.	$1.93	$78.55	$68.54	40.7
Feb.	1.93	78.17	68.21	40.5
Mar.	1.95	78.78	68.68	40.4
Apr.	1.96	78.99	68.75	40.3
May	1.97	79.00	68.46	40.1
June	1.97	79.19	68.15	40.2
July	1.97	79.00	67.52	40.1
Aug.	1.98	79.79	68.31	40.3
Sept.	2.00	81.40	69.51	40.7
Oct.	2.02	82.21	69.85	40.7
Nov.	2.03	82.42	69.97	40.6
Dec.	2.05	84.05	71.23	41.0
Avg.	$1.98	$80.19	$69.01	40.5
1955				
Jan.	$1.84	$73.97	$64.72	40.2
Feb.	1.85	74.74	65.39	40.4
Mar.	1.85	75.11	65.71	40.6
Apr.	1.86	74.96	65.64	40.3
May	1.87	76.30	66.81	40.8
June	1.87	76.11	66.53	40.7
July	1.89	76.36	66.57	40.4
Aug.	1.88	76.33	66.66	40.6
Sept.	1.90	77.71	67.63	40.9
Oct.	1.91	78.50	68.32	41.1
Nov.	1.93	79.52	69.15	41.2
Dec.	1.93	79.71	69.49	41.3
Avg.	$1.88	$76.52	$66.83	40.7
Durable Goods				
1956				
Jan.	$2.06	$84.87	$74.06	41.2
Feb.	2.05	84.05	73.34	41.0
Mar.	2.06	84.25	73.45	40.9
Apr.	2.08	85.49	74.40	41.1
May	2.08	84.86	73.54	40.8
June	2.09	85.27	73.38	40.8
July	2.07	84.25	72.00	40.7
Aug.	2.10	85.68	73.36	40.8
Sept.	2.14	88.60	75.66	41.4
Oct.	2.15	89.01	75.81	41.5
Nov.	2.16	88.99	75.54	41.2
Dec.	2.18	91.34	77.41	41.9
Avg.	$2.10	$86.31	$74.28	41.1
1955				
Jan.	$1.96	$80.16	$70.13	40.9
Feb.	1.96	80.56	70.48	41.1
Mar.	1.97	81.56	71.36	41.4
Apr.	1.98	81.58	71.44	41.2
May	1.99	82.78	72.49	41.6
June	1.99	81.99	71.67	41.2
July	2.02	82.62	72.02	40.9
Aug.	2.01	82.61	72.15	41.1
Sept.	2.04	84.46	73.51	41.4
Oct.	2.04	85.07	74.04	41.7
Nov.	2.06	86.11	74.88	41.8
Dec.	2.06	86.52	75.43	42.0
Avg.	$2.01	$83.21	$72.67	41.4
Motor Vehicles (Incl. Parts)				
1956				
Jan.	$2.28	$90.97	$79.38	39.9
Feb.	2.28	87.55	76.40	38.4
Mar.	2.27	89.67	78.18	39.5
Apr.	2.28	90.97	79.17	39.9
May	2.28	85.73	74.29	37.6
June	2.31	88.47	76.13	38.3
July	2.33	92.97	79.46	39.9
Aug.	2.35	93.30	79.88	39.7
Sept.	2.45	99.47	84.51	40.6
Oct.	2.46	102.83	87.37	41.8
Nov.	2.48	106.14	90.10	42.8
Dec.	2.51	112.45	95.30	44.8
Avg.	$2.36	$95.04	$81.79	40.3
1955				
Jan.	$2.25	$96.75	$84.64	43.0
Feb.	2.26	98.99	86.60	43.8
Mar.	2.27	100.56	87.98	44.3
Apr.	2.25	97.88	85.71	43.5
May	2.28	101.00	88.44	44.3
June	2.23	89.20	77.97	40.0
July	2.30	97.75	85.22	42.5
Aug.	2.30	95.45	83.36	41.5
Sept.	2.33	96.23	83.75	41.3
Oct.	2.35	98.47	85.70	41.9
Nov.	2.38	104.96	91.27	44.1
Dec.	2.33	98.09	85.52	42.1
Avg.	$2.29	$97.78	$85.40	42.7

‡—Weekly earnings adjusted to Consumers' Price Index.



Aircraft and Parts

	Average Earnings Hourly	Average Earnings Weekly	Real Weekly Earnings‡	Average Hrs. per Week	Average Earnings Hourly	Average Earnings Weekly	Real Weekly Earnings‡	Average Hrs. per Week
	1956				1955			
Jan.	$2.21	$92.82	$80.99	42.0	$2.14	$88.81	$77.70	41.5
Feb.	2.21	92.82	80.99	42.0	2.14	87.95	76.95	41.1
Mar.	2.22	92.57	80.71	41.7	2.14	88.38	77.32	41.3
Apr.	2.25	93.83	81.66	41.7	2.14	87.10	76.27	40.7
May	2.26	94.47	81.86	41.8	2.15	88.15	77.19	41.0
June	2.27	94.66	81.46	41.7	2.15	88.15	77.05	41.0
July	2.29	95.95	82.01	41.9	2.17	89.40	77.94	41.2
Aug.	2.30	97.06	83.10	42.2	2.17	88.97	77.71	41.0
Sept.	2.31	97.71	83.44	42.3	2.19	90.67	78.91	41.4
Oct.	2.31	97.71	83.02	42.3	2.20	91.30	79.46	41.5
Nov.	2.32	98.37	83.50	42.4	2.20	91.52	79.58	41.6
Dec.	2.34	100.15	84.87	42.8	2.21	93.26	81.31	42.2
Avg.	$2.27	$95.68	$82.34	42.1	$2.17	$89.62	$78.27	41.3

Nondurable Goods

	Average Earnings Hourly	Average Earnings Weekly	Real Weekly Earnings‡	Average Hrs. per Week	Average Earnings Hourly	Average Earnings Weekly	Real Weekly Earnings‡	Average Hrs. per Week
	1956				1955			
Jan.	$1.75	$69.83	$60.93	39.9	$1.68	$66.02	$57.76	39.3
Feb.	1.75	69.65	60.78	39.8	1.68	66.36	58.06	39.5
Mar.	1.78	70.49	61.46	39.6	1.68	66.70	58.36	39.7
Apr.	1.79	70.17	61.07	39.2	1.69	65.91	57.71	39.0
May	1.80	70.38	60.99	39.1	1.70	67.32	58.95	39.6
June	1.81	70.95	61.06	39.2	1.70	67.83	59.29	39.9
July	1.82	71.71	61.29	39.4	1.71	67.89	59.19	39.7
Aug.	1.81	71.68	61.37	39.6	1.70	67.83	59.24	39.9
Sept.	1.82	72.44	61.86	39.8	1.72	68.97	60.03	40.1
Oct.	1.83	72.83	61.88	39.8	1.72	69.32	60.33	40.3
Nov.	1.85	73.26	62.19	39.6	1.74	70.12	60.97	40.3
Dec.	1.86	74.03	62.74	39.8	1.74	70.30	61.29	40.4
Avg.	$1.81	$71.45	$61.49	39.6	$1.71	$68.06	$59.44	39.8

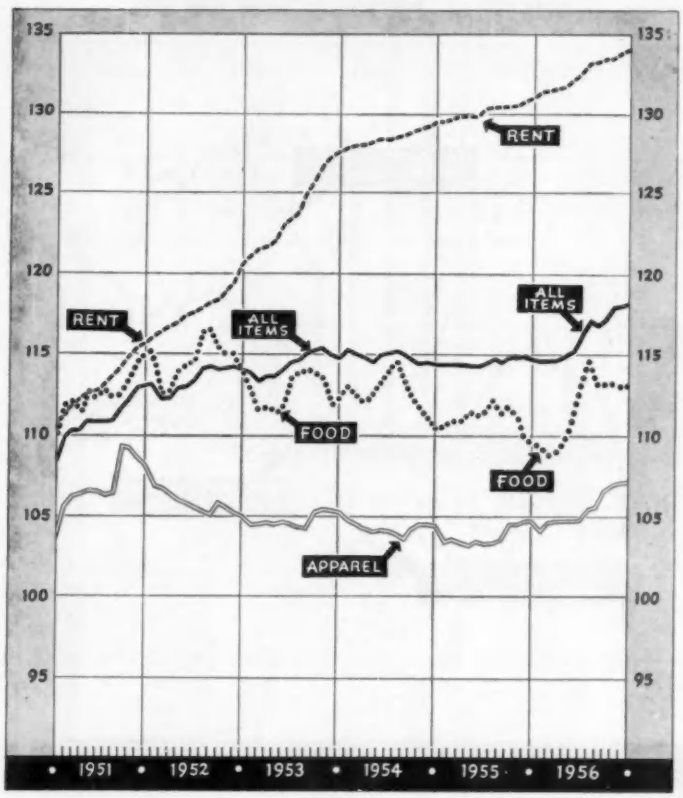
‡—Weekly earnings adjusted to Consumers' Price Index.

COST OF LIVING

CONSUMER PRICE INDEX—BUREAU OF LABOR STATISTICS

Based on Monthly Average of 1947-1949 = 100

TREND OF CONSUMER PRICES



Wholesale Prices of Selected Commodities

Bureau of Labor Statistics Index, 1947-1949 = 100

1956	All Commodities	Farm Products	Processed Foods	Textile Products	Metals and Metal Products	Lumber and Wood Products	Machinery and Motive Products
Jan.	111.9	84.1	98.3	95.7	145.1	126.3	133.3
Feb.	112.4	86.0	99.0	96.0	145.1	126.7	133.9
Mar.	112.8	86.6	99.2	95.9	146.5	128.0	134.7
Apr.	113.6	88.0	100.4	95.1	147.7	128.5	135.7
May	114.4	90.9	102.4	94.9	146.3	128.0	136.5
June	114.3	91.2	102.3	94.9	145.3	127.3	136.8
July	114.0	90.0	102.2	94.9	144.9	126.6	136.9
Aug.	114.7	89.1	102.6	94.8	150.2	125.2	137.7
Sept.	115.5	90.1	104.0	94.8	151.9	123.6	139.7
Oct.	115.6	88.4	103.6	95.3	152.2	122.0	141.1
Nov.	115.9	87.9	103.6	95.4	152.1	121.5	142.4
Dec.	116.2	88.6	103.1	95.6	152.4	120.9	143.5
Average	114.3	88.4	101.7	95.3	148.4	125.4	137.8
			Monthly Average				
1955	110.7	89.7	101.7	95.3	136.6	123.6	128.4
1954	110.3	95.6	105.3	95.2	128.0	118.0	124.6
1953	110.1	97.0	104.6	97.3	126.9	120.3	123.0
1952	111.6	107.0	108.8	99.8	123.0	120.3	121.5
1951	114.8	113.4	111.4	110.6	122.8	123.9	119.0
1950	103.1	97.5	99.8	99.2	110.3	113.9	108.6
1949	99.2	92.8	95.7	95.5	104.8	99.2	106.6
1948	104.4	107.3	106.1	104.4	103.9	107.2	100.9
1947	96.4	100.0	98.2	100.1	91.3	93.7	92.5
1946	78.7	83.2	77.6	....	73.9	60.3	80.3

All Items

Month	1956	1955	1954	1953
Jan.	114.6	114.3	115.2	113.9
Feb.	114.6	114.3	115.0	113.4
Mar.	114.7	114.3	114.8	113.6
Apr.	114.9	114.2	114.6	113.7
May	115.4	114.2	115.0	114.0
June	116.2	114.4	115.1	114.5
July	117.0	114.7	115.2	114.7
Aug.	116.8	114.5	115.0	115.0
Sept.	117.1	114.9	114.7	115.2
Oct.	117.7	114.9	114.5	115.4
Nov.	117.8	115.0	114.6	115.0
Dec.	118.0	114.7	114.3	114.9
Average	116.0	114.5	114.8	114.4

Apparel

Month	1956	1955	1954	1953
Jan.	104.1	103.3	104.9	104.6
Feb.	104.6	103.4	104.7	104.6
Mar.	104.8	103.2	104.3	104.7
Apr.	104.8	103.1	104.1	104.6
May	104.8	103.3	104.2	104.7
June	104.8	103.2	104.2	104.6
July	105.3	103.2	104.0	104.4
Aug.	105.5	103.4	103.7	104.3
Sept.	106.5	104.6	104.3	105.3
Oct.	106.8	104.6	104.6	105.5
Nov.	107.0	104.7	104.6	105.5
Dec.	107.0	104.7	104.3	105.3
Average	105.5	103.7	104.3	104.8

Food

Month	1956	1955	1954	1953
Jan.	109.2	110.6	113.1	113.1
Feb.	108.8	110.8	112.6	111.5
Mar.	109.0	110.8	112.1	111.7
Apr.	109.6	111.2	112.4	111.5
May	111.0	111.1	113.3	112.1
June	113.2	111.3	113.8	113.7
July	114.8	113.1	114.6	113.8
Aug.	113.1	111.2	113.9	114.1
Sept.	113.1	111.6	112.4	113.8
Oct.	113.1	110.8	111.8	113.6
Nov.	112.9	109.8	111.1	112.0
Dec.	112.9	109.5	110.4	112.3
Average	111.7	110.9	112.6	112.8

Rent

Month	1956	1955	1954	1953
Jan.	131.4	129.5	127.8	121.1
Feb.	131.5	129.7	127.9	121.5
Mar.	131.6	130.0	128.0	121.7
Apr.	131.7	129.9	128.2	122.1
May	132.2	130.3	128.3	123.0
June	132.5	130.4	128.3	123.3
July	133.2	130.4	128.5	123.8
Aug.	133.2	130.5	128.6	125.1
Sept.	133.4	130.5	128.8	126.0
Oct.	133.4	130.8	129.6	126.8
Nov.	133.8	130.9	129.2	127.3
Dec.	134.2	131.1	129.4	127.6
Average	132.7	130.3	128.5	124.1

Medical Care

Month	1956	1955	1954	1953
Jan.	130.7	126.5	123.7	119.4
Feb.	130.9	126.8	124.1	119.3
Mar.	131.4	127.0	124.4	119.5
Apr.	131.6	127.3	124.9	120.2
May	131.9	127.5	125.1	120.7
June	132.0	127.6	125.1	121.1
July	132.7	127.9	125.2	121.5
Aug.	133.3	128.0	125.5	121.8
Sept.	134.0	128.2	125.7	122.6
Oct.	134.1	128.7	125.9	122.8
Nov.	134.5	129.8	126.1	123.3
Dec.	134.7	130.2	126.3	123.6
Average	132.6	128.0	125.2	121.3

Transportation

Month	1956	1955	1954	1953
Jan.	126.8	127.6	130.5	129.3
Feb.	126.9	127.4	129.4	129.1
Mar.	126.7	127.3	129.0	129.3
Apr.	126.4	125.3	129.1	129.4
May	127.1	125.5	129.1	129.4
June	126.8	125.8	128.9	129.4
July	127.7	125.4	126.7	129.7
Aug.	128.5	125.4	126.6	130.6
Sept.	128.6	125.2	126.4	130.7
Oct.	132.6	126.6	125.0	130.7
Nov.	133.2	128.5	127.6	130.1
Dec.	133.1	127.3	127.3	128.9
Average	128.7	126.4	128.0	129.7

‡—Weekly earnings adjusted to Consumers' Price Index.

‡—Weekly earnings adjusted to Consumers' Price Index.

INDUSTRIAL PRODUCTION

INDEXES OF INDUSTRIAL PRODUCTION

Adjusted for Seasonal Variation

Based on Monthly Average of 1947-1949 = 100

Total Industrial Production

	1956	1955	1954	1953
Jan.	143	132	125	134
Feb.	143	133	125	134
Mar.	141	135	123	135
Apr.	143	136	123	136
May	141	138	125	137
June	141	139	124	136
July	136	139	123	137
Aug.	142	140	123	136
Sept.	145	142	124	133
Oct.	146	143	126	132
Nov.	146	143	128	129
Dec.	147	144	130	126
Average	143	139	125	134

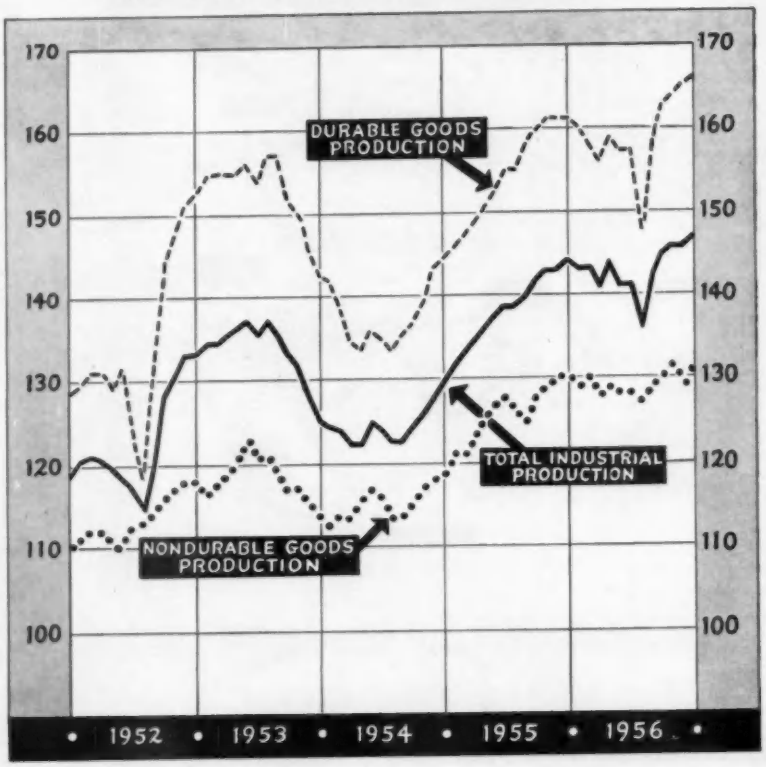
Manufactures

	1956	1955	1954	1953
Jan.	145	133	127	136
Feb.	144	134	126	136
Mar.	142	136	125	137
Apr.	144	138	125	138
May	143	140	126	139
June	143	141	125	138
July	137	141	124	139
Aug.	144	142	125	138
Sept.	147	144	126	135
Oct.	148	145	128	134
Nov.	147	145	130	131
Dec.	148	146	131	127
Average	144	140	127	136

Durable Manufactures

	1956	1955	1954	1953
Jan.	160	145	141	154
Feb.	158	147	139	155
Mar.	156	148	135	155
Apr.	159	151	134	155
May	157	153	136	156
June	157	155	135	154
July	148	155	134	157
Aug.	158	158	135	157
Sept.	164	160	137	152
Oct.	164	161	139	151
Nov.	165	161	142	146
Dec.	166	161	143	142
Average	159	155	138	153

1956 INDUSTRIAL PRODUCTION UP 3%



Transportation Equipment

	1956	1955	1954	1953
Jan.	205	197	185	191
Feb.	202	199	179	191
Mar.	197	200	173	190
Apr.	193	202	174	190
May	186	202	178	192
June	190	198	170	188
July	191	202	170	196
Aug.	194	203	166	191
Sept.	198	205	167	186
Oct.	203	208	169	189
Nov.	216	213	175	180
Dec.	219	212	187	182
Average	199	203	174	189

Nondurable Manufactures

	1956	1955	1954	1953
Jan.	129	121	113	117
Feb.	130	121	114	118
Mar.	128	124	114	119
Apr.	129	126	115	121
May	128	127	117	123
June	128	128	116	121
July	127	126	114	121
Aug.	129	125	114	119
Sept.	129	123	115	117
Oct.	131	129	117	117
Nov.	129	129	118	115
Dec.	131	130	119	112
Average	129	126	115	119

Minerals

	1956	1955	1954	1953
Jan.	131	120	113	116
Feb.	131	123	113	116
Mar.	130	121	112	115
Apr.	130	119	109	115
May	129	121	111	117
June	130	122	114	119
July	122	120	112	120
Aug.	123	121	109	119
Sept.	128	123	108	118
Oct.	128	123	109	114
Nov.	130	125	113	111
Dec.	130	129	116	113
Average	129	122	112	116

Manufacturers' Sales and Inventories

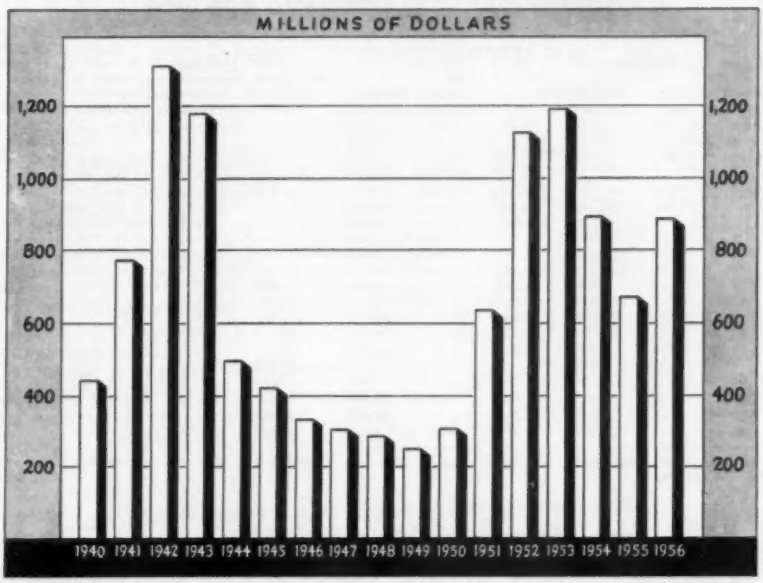
Based on data from Office of Business Economics, Department of Commerce

Year	Sales: All Manufacturing Industries	Sales: Durable Goods Industries	Sales: Nondurable Goods Industries	Inventories: All Manufacturing Industries	Inventories: Durable Goods Industries	Inventories: Nondurable Goods Industries
1956	$330,900,000,000	$164,600,000,000	$166,300,000,000	$51,600,000,000	$29,900,000,000	$21,700,000,000
1955	317,000,000,000	158,000,000,000	159,000,000,000	46,100,000,000	26,200,000,000	19,900,000,000
1954	280,755,000,000	133,585,000,000	147,170,000,000	43,265,000,000	24,023,000,000	19,242,000,000
1953	298,423,000,000	149,578,000,000	148,845,000,000	45,942,000,000	26,338,000,000	19,604,000,000
1952	274,197,000,000	131,215,000,000	142,982,000,000	43,799,000,000	24,412,000,000	19,387,000,000
1951	267,705,000,000	124,504,000,000	143,201,000,000	42,815,000,000	22,806,000,000	20,009,000,000
1950	231,415,000,000	105,649,000,000	125,766,000,000	34,314,000,000	16,780,000,000	17,534,000,000

1946	73.7	83.2	77.6	....	73.9	60.3	80.3	Average ..	128.7	126.4	128.0	129.7

MACHINE TOOLS

VALUE OF MACHINE TOOL SHIPMENTS



Units and Value of Machine Tool Shipments—by Years

Metal Cutting Type Only

As reported by the National Machine Tool Builders Association

Year	Shipments Units	Shipments Value	Avg. Cost per Tool	Year	Shipments Units	Shipments Value	Avg. Cost per Tool
1956	63,900	$886,150,000	$13,868	1950	41,500	$305,550,000	$7,363
1955	50,500	670,400,000	13,275	1949	34,500	249,150,000	7,222
1954	58,500	891,750,000	15,251	1948	50,000	288,450,000	5,769
1953	91,500	1,191,200,000	13,019	1947	60,000	306,000,000	5,100
1952	96,800	1,125,900,000	11,630	1946	75,000	334,800,000	4,464
1951	70,800	632,250,000	8,930	1945	103,000	423,700,000	4,114

Value of Machine Tool Shipments

(Metal Cutting Type Only)

As reported by the National Machine Tool Builders Association

Month	1956 Domestic	1956 Foreign	1956 Total	1955 Domestic	1955 Foreign	1955 Total	1954 Domestic	1954 Foreign	1954 Total
January	$49,400,000	$5,200,000	$54,600,000	$43,950,000	$5,550,000	$49,500,000	$87,300,000	$7,150,000	$94,450,000
February	58,700,000	5,900,000	64,600,000	43,950,000	5,800,000	49,750,000	87,550,000	8,000,000	95,550,000
March	67,850,000	6,300,000	74,150,000	53,900,000	6,000,000	59,900,000	88,250,000	8,500,000	96,750,000
April	65,000,000	6,800,000	71,800,000	48,650,000	4,600,000	53,250,000	81,400,000	8,100,000	89,500,000
May	70,500,000	6,300,000	76,800,000	46,550,000	6,950,000	53,500,000	73,350,000	6,600,000	79,950,000
June	69,550,000	6,700,000	76,250,000	52,950,000	5,850,000	58,800,000	75,600,000	6,100,000	81,700,000
July	60,700,000	4,450,000	65,150,000	40,250,000	4,950,000	45,200,000	55,900,000	4,900,000	60,800,000
August	69,000,000	6,100,000	75,100,000	44,000,000	4,650,000	48,650,000	54,850,000	5,350,000	60,200,000
September	65,400,000	5,700,000	71,100,000	51,100,000	6,700,000	57,800,000	58,300,000	4,800,000	63,100,000
October	79,850,000	9,900,000	89,750,000	53,600,000	6,800,000	60,400,000	50,900,000	5,600,000	56,500,000
November	73,600,000	8,100,000	81,700,000	56,700,000	6,650,000	63,350,000	47,100,000	6,000,000	53,100,000
December	75,250,000	10,100,000	85,350,000	64,400,000	5,900,000	70,300,000	52,750,000	7,400,000	60,150,000
Total	$804,800,000	$81,550,000	$886,350,000	$600,000,000	$70,400,000	$670,400,000	$813,250,000	$78,500,000	$891,750,000

Value of Machine Tool Net New Orders

(Metal Cutting Type Only)

As reported by the National Machine Tool Builders Association

Month	1956 Domestic	1956 Foreign	1956 Total	1955 Domestic	1955 Foreign	1955 Total	1954 Domestic	1954 Foreign	1954 Total
January	$96,700,000	$12,850,000	$109,550,000	$51,050,000	$6,600,000	$57,650,000	$39,500,000	$5,350,000	$44,850,000
February	72,350,000	8,950,000	81,300,000	52,050,000	5,950,000	58,000,000	37,000,000	3,700,000	40,700,000
March	80,050,000	9,450,000	89,500,000	53,400,000	7,250,000	60,650,000	37,000,000	6,900,000	43,900,000
April	74,000,000	5,300,000	79,300,000	44,750,000	5,500,000	50,250,000	33,650,000	4,400,000	38,050,000
May	79,450,000	7,650,000	87,100,000	64,250,000	4,450,000	68,700,000	34,450,000	3,350,000	37,800,000
June	55,650,000	6,200,000	61,850,000	68,350,000	6,200,000	74,550,000	46,850,000	4,450,000	51,300,000
July	55,250,000	6,650,000	61,900,000	56,800,000	5,400,000	62,200,000	30,200,000	4,250,000	34,450,000
August	78,250,000	9,250,000	87,500,000	54,350,000	7,700,000	62,050,000	36,100,000	4,500,000	40,600,000
September	68,800,000	9,650,000	78,450,000	53,400,000	4,950,000	58,350,000	47,100,000	3,150,000	50,250,000
October	57,550,000	8,550,000	66,100,000	92,700,000	6,450,000	99,150,000	37,700,000	4,400,000	42,100,000
November	58,700,000	5,550,000	64,250,000	117,750,000	6,500,000	124,250,000	28,150,000	4,950,000	33,100,000
December	51,800,000	5,300,000	57,100,000	137,400,000	13,900,000	151,300,000	50,450,000	6,900,000	57,350,000
Total	$828,550,000	$95,350,000	$923,900,000	$846,250,000	$80,850,000	$927,100,000	$458,150,000	$56,300,000	$514,450,000

1952	274,197,000,000	131,215,000,000	142,982,000,000	43,799,000,000	24,412,000,000	19,387,000,000
1951	267,705,000,000	124,504,000,000	143,201,000,000	42,815,000,000	22,806,000,000	20,009,000,000
1950	231,415,000,000	105,649,000,000	125,766,000,000	34,214,000,000	16,780,000,000	17,534,000,000

• MACHINE TOOLS •

General Data for the Machine Tool Industry—by Regions and States

As reported by the Industry Division, Bureau of the Census

Region and State	Establishments, number	1954: All Employees, Number	1954: All Employees, Payroll ($1,000)	1954: Production Workers, Number	1954: Production Workers, Man-hours (1,000)	1954: Production Workers, Wages ($1,000)	1954: Value added by manufacture ($1,000)	1954: Cost of materials, etc. ($1,000)	1954: Value of Shipments ($1,000)	1954: Capital Expenditures, New ($1,000)	1947: All Employees, Number	1947: Value added by manufacture ($1,000)
New England	105	27,099	$133,541	20,968	43,486	$95,009	$239,611	$86,239	$325,851	$11,621	23,146	$93,566
Vermont	4	4,644	23,042	3,755	7,891	17,363	45,037	13,332	58,369	2,317	(d)	(d)
Massachusetts	43	6,233	29,960	4,368	8,754	18,457	57,807	20,459	78,267	1,570	4,103	18,084
Connecticut	41	10,627	57,712	8,547	18,281	43,142	103,827	37,866	141,693	5,304	8,294	35,391
Middle Atlantic	109	7,656	37,220	6,094	12,908	27,559	69,282	28,993	98,276	4,948	7,569	39,008
New York	56	5,105	26,257	4,162	8,884	19,319	45,457	15,729	61,186	3,313	4,230	22,057
New Jersey	27	870	4,304	629	1,283	2,608	6,823	3,169	9,993	317	1,270	8,685
Pennsylvania	26	1,680	6,659	1,301	2,739	5,131	17,001	10,094	27,096	918	2,069	8,266
East North Central	326	43,736	250,533	33,160	73,296	172,965	463,389	233,877	697,269	20,575	37,502	199,369
Ohio	94	19,319	107,617	15,018	32,988	76,157	192,161	107,103	299,268	9,673	17,275	90,901
Indiana	17	1,585	8,303	1,175	2,476	5,700	17,831	4,937	22,767	509	1,722	(d)
Illinois	59	7,630	41,691	5,557	12,775	27,741	81,063	40,402	121,466	4,346	4,244	25,889
Michigan	129	9,044	57,166	7,034	15,837	40,508	101,418	55,751	157,170	3,436	8,359	43,160
Wisconsin	27	6,156	35,754	4,374	9,217	22,857	70,913	25,684	96,597	2,609	5,902	(d)
West North Central	27	1,197	5,140	853	1,571	2,986	6,943	4,873	11,817	192	1,377	5,871
Minnesota	6	625	2,778	475	905	1,745	3,662	3,677	7,340	84	426	2,248
Missouri	13	151	549	126	195	406	855	354	1,210	66	660	(d)
South	10	505	2,437	380	803	1,639	3,459	2,283	5,473	129	407	2,114
West	62	764	3,418	649	1,182	2,522	5,532	2,441	7,794	215		
California	56	729	3,278	621	1,135	2,412	5,287	2,311	7,599	(d)		
Total—United States	639	80,959	$432,290	62,106	133,247	$302,682	$788,219	$358,710	$1,146,932	$37,683	70,001	$343,198

(d)—Withheld to avoid disclosure

Metalworking Machines
Value of Shipments, New Orders, Cancellations, and Unfilled Orders

As reported by the Industry Division, Bureau of the Census

	Three Quarters 1956	Three Quarters 1955	Years 1955	Years 1954
METALWORKING MACHINERY				
Cutting Types				
Shipments	$590,357,000	$451,874,000	$633,794,000	$821,450,000
New Orders	717,389,000	556,143,000	918,005,000	523,188,000
Cancellations	44,614,000	22,569,000	34,705,000	41,663,000
Unfilled Orders, end of period	589,685,000	340,261,000	508,067,000	258,561,000
Forming and Shaping Types				
Shipments	$223,203,000	$146,953,000	$207,034,000	$251,349,000
New Orders	182,478,000	276,250,000	278,107,000	164,846,000
Cancellations	13,748,000	6,393,000	8,264,000	8,993,000
Unfilled Orders, end of period	265,075,000	279,643,000	319,548,000	656,739,000
All Metalworking Machinery				
Shipments	$813,560,000	$598,827,000	$840,828,000	$1,072,799,000
New Orders	899,867,000	832,393,000	1,296,112,000	688,034,000
Cancellations	58,362,000	28,962,000	42,969,000	50,661,000
Unfilled Orders, end of period	854,760,000	619,904,000	827,615,000	415,300,000

Metalworking Machines
Value of Shipments by Type of Machine

As reported by the Industry Division, Bureau of the Census

	Three Quarters 1956	Three Quarters 1955	Years 1955	Years 1954
MACHINE TOOLS				
Boring machines	$32,167,000	$63,420,000	$86,179,000	$118,289,000
Broaching machines	12,274,000	12,142,000	16,510,000	16,429,000
Drilling machines	59,300,000	67,009,000	89,633,000	124,039,000
Gear cutting and finishing	43,075,000	28,706,000	42,249,000	51,751,000
Grinding machines	95,210,000	67,267,000	98,043,000	112,539,000
Lathes	155,556,000	107,157,000	155,922,000	220,970,000
Milling machines	80,447,000	70,890,000	95,321,000	115,824,000
Planers	5,456,000	6,171,000	8,292,000	15,608,000
Miscellaneous machine tools	56,372,000	29,111,000	41,145,000	46,001,000
Total	$590,357,000	$451,874,000	$633,794,000	$821,450,000
FORMING AND SHAPING TOOLS				
Bending and forming machines	$22,194,000	$16,932,000	$23,518,000	$21,365,000
Presses, hydraulic and pneumatic	19,020,000	21,345,000	33,116,000	40,719,000
Presses, mechanical	143,497,000	79,292,000	108,853,000	142,766,000
Presses, manual	556,000	246,000	320,000	754,000
Punching and shearing machines	18,328,000	12,626,000	18,333,000	16,086,000
Forging machines and hammers	8,288,000	7,651,000	9,583,000	14,575,000
Wire and ribbon forming machines	2,247,000	2,267,000	3,011,000	2,513,000
Riveting machines	2,998,000	2,293,000	3,106,000	3,268,000
Miscellaneous secondary machines	5,575,000	4,301,000	7,194,000	9,300,000
Total	$223,203,000	$146,953,000	$207,034,000	$251,349,000
Total—Metalworking machines	$813,560,000	$598,827,000	$840,828,000	$1,072,799,000

Total	$828,550,000	$95,350,000	$923,900,000	$846,250,000	$80,850,000	$927,100,000	$458,150,000	$56,300,000	$514,450,000

MATERIALS HANDLING

Shipments and Value of Industrial Trucks, Tractors, Trailers, and Portable Elevators.

As reported by the Industry Division, Bureau of the Census

Type of Truck and Tractor	1954 Units	1954 Value	1947 Units	1947 Value
Powered trucks and tractors				
Trucks (operator walking)	8,452	$10,937,000	7,469	$8,053,000
Trucks (operator riding) and tractors				
Electric (storage battery and gasoline powered)				
Fork trucks	4,205	21,983,000	3,522	15,212,000
Trucks (except fork)	670	3,221,000	1,300	5,667,000
Tractors	127	385,000	199	367,000
Gasoline				
Fork trucks	17,287	74,102,000	14,421	41,758,000
Trucks (except fork)	1,172	6,152,000	1,142	3,800,000
Tractors	2,863	4,526,000	2,261	3,523,000
All other trucks (operator riding) and tractors (incl. Diesel, compressed-air powered, etc.)	....	2,444,000	....	(1)
Portable elevators (stackers)	4,775	3,630,000	4,653	3,162,000
Hand trucks and trailers (incl. dollies and platform trucks)				
Hand lift	....	11,279,000	....	8,373,000
Other hand trucks	....	30,242,000	....	20,605,000
Metal pallets and skids	....	8,856,000	....	40,094,000
Parts and attachments and miscellaneous equipment	....	58,264,000	....	
Industrial trucks and tractors, n.e.c.	....	11,278,000	....	4,210,000
Total—Industrial Trucks and Tractors	....	$247,299,000	....	$154,824,000

(1)—Included with trucks and tractors, n.e.c.

Conveyors and Conveying Equipment

As reported by the Industry Division, Bureau of the Census

Product	Shipments 1954 Units	Shipments 1954 Value	Shipments 1947 Units	Shipments 1947 Value
Overhead traveling cranes and monorail systems				
Cranes (except construction power cranes)				
Electric, overhead traveling	3,958	$86,975,000	2,149	$27,987,000
Hand power, overhead traveling	1,620	1,931,000	1,042	1,258,000
Monorail systems	....	14,085,000	....	7,997,000
Total—Traveling cranes and monorail systems	....	$102,991,000	....	$37,242,000
Farm elevators and parts				
Portable				
Single chain	17,039	2,636,000	18,782	2,888,000
Double chain	48,225	16,260,000	18,032	5,931,000
Auger type	103,729	6,507,000	19,250	2,356,000
Stationary	2,116	1,609,000	1,201	603,000
Other farm elevators	....	1,317,000		
Parts for farm elevators	....	1,986,000	.....	4,363,000
Attachments for farm elevators	....	3,386,000		
Farm elevators and parts, n.e.c.	....	.....		
Total—Farm elevators and parts	....	$32,701,000	....	$16,141,000
Conveyors and conveying equipment (except hoists)				
Gravity conveyors (skate wheel and roller)	....	22,129,000	....	10,262,000
Power conveyors (except overhead trolley)	....	30,523,000	....	17,604,000
Overhead trolley conveyor systems	....	16,072,000	....	10,904,000
Pneumatic tube systems (incl. foot power)	....	5,601,000	....	2,200,000
Portable conveyors (except farm)	....	6,655,000	....	14,583,000
Underground mine conveyors and conveying systems	....	3,095,000	....	87,020,000
Other conveyors and conveying systems	....	136,632,000		
Conveyor and conveying equipment, n.e.c.	....	8,362,000	....	3,364,000
Parts, attachments, and accessories	....	60,985,000	....	34,754,000
Total—Conveyors and conveying equipment	....	$229,069,000	....	$145,937,000
Total—Cranes, monorails, farm elevators, and conveyors	....	$425,746,000	....	$234,074,000

General Data for the Industrial Trucks and Tractors Industry

As reported by the Industry Division, Bureau of the Census

Region and State	1954 Establishments, number	1954 All Employees Number	1954 All Employees Payroll ($1,000)	1954 Production Workers Number	1954 Production Workers Man-hours (1,000)	1954 Production Workers Wages ($1,000)	1954 Value added by manufacture ($1,000)	1954 Cost of materials, etc. ($1,000)	1954 Value of Shipments ($1,000)	1954 Capital Expenditures, New ($1,000)	1947 All Employees, Number	1947 Value added by manufacture ($1,000)
Northeast	54	4,381	$19,220	2,842	5,582	$11,397	34,795	$23,631	$58,426	$1,487	3,737	$20,004
Pennsylvania	17	3,110	13,856	1,968	3,780	7,679	23,342	17,232	40,576	(d)	2,393	(d)
East North Central	97	7,660	35,749	5,406	10,768	22,514	59,710	68,825	128,537	4,406	7,342	50,003
Ohio	29	2,600	12,532	1,732	3,491	6,914	19,787	22,387	42,175	2,290	2,688	17,279
Illinois	27	1,879	8,391	1,259	2,459	5,079	16,173	11,367	27,541	1,252	2,313	14,542
Michigan	25	2,554	12,206	1,922	3,796	8,679	19,261	29,876	49,138	718	1,942	15,563
West North Central	18	1,046	4,511	764	1,612	2,856	7,333	7,375	14,708	463	462	2,309
South Atlantic	18	383	1,131	307	588	809	1,934	1,732	2,667	124	529	1,934
East South Central	10	264	914	225	491	638	1,373	1,306	2,679	(d)	184	624
West South Central	7	246	1,042	191	376	726	1,978	2,097	4,076	(d)	130	466
West	40	1,727	8,406	1,242	2,464	5,211	14,729	16,105	30,835	310	1,541	6,177
Oregon	10	1,032	5,247	703	1,324	2,933	8,537	9,539	18,376	57	992	4,190
Total—United States	244	15,710	$70,974	10,980	21,884	$44,165	$121,854	$121,074	$242,929	$6,850	13,926	$81,517

Miscellaneous secondary machines	5,575,000	4,301,000	7,194,000	9,300,000
Total	$223,203,000	$146,053,000	$207,034,000	$251,349,000
Total—Metalworking machines	$813,560,000	$598,827,000	$840,828,000	$1,072,799,000

• MATERIALS HANDLING •

Shipments of Industrial Trucks and Tractors

Compiled by the Industrial Truck Association and recorded in Survey of Current Business

	1955				1956			
	Electric				Electric			
Month	Hand (Motorized)	Rider Type	Total Electric	Gasoline Powered Type	Hand (Motorized)	Rider Type	Total Electric	Gasoline Powered Type
Jan.	387	342	729	1,449	570	409	979	1,777
Feb.	444	359	803	1,652	603	491	1,094	1,765
Mar.	507	425	932	1,808	671	503	1,174	2,170
Apr.	476	406	882	1,647	624	503	1,127	2,232
May	678	833	1,511	3,926	719	520	1,239	2,254
June	578	533	1,111	2,188	702	533	1,235	2,141
July	521	455	976	1,961	682	512	1,194	2,725
Aug.	506	346	852	2,163	554	374	928	2,137
Sept.	670	441	1,111	2,463	577	442	1,019	2,141
Oct.	650	449	1,099	2,569	682	491	1,173	2,191
Nov.	636	441	1,077	2,684	565	501	1,066	2,206
Dec.	638	520	1,158	2,333	521	442	963	1,977
Total	6,691	5,550	12,241	26,843	7,470	5,721	13,191	25,716

Construction Machinery

Excavating and Earthmoving Equipment

As reported by the Industry Division, Bureau of the Census

	1956		1955		1954		1953	
	Shipments		Number of Companies	Shipments	Number of Companies	Shipments	Number of Companies	Shipments
Type of Equipment	Number of Units	Value		Number of Units / Value		Number of Units / Value		Number of Units / Value
Road Construction and Maintenance machinery								
Ditchers and trenchers	1,201	$10,487,000	11	1,285 / $10,855,000	8	705 / $7,473,000	8	797 / $7,734,000
Ladder-type	648	4,553,000	7	681 / 4,759,000	5	256 / 2,954,000	4	295 / 3,051,000
Wheel-type	553	5,934,000	7	604 / 6,096,000	5	449 / 4,519,000	6	502 / 4,683,000
Carrying and hauling scrapers	5,659	51,090,000	13	5,637 / 39,025,000	15	3,577 / 27,380,000	18	3,895 / 29,275,000
For use with tracklaying tractors	1,207	10,512,000	14	1,510 / 10,704,000	14	1,327 / 9,379,000	12	1,617 / 10,916,000
For use with wheel-type tractors	4,452	40,578,000	12	4,127 / 28,321,000	11	2,250 / 18,001,000	11	2,278 / 18,359,000
Motor graders and light maintainers	9,613	101,929,000	12	8,493 / 76,734,000	11	7,236 / 64,493,000	11	7,157 / 62,668,000
Under 45 bhp	625	2,609,000	6	946 / 3,562,000	6	1,170 / 3,890,000	(1)	(1) / (1)
45-89 bhp	2,417	19,064,000	..	2,874 / 21,917,000	7	1,991 / 17,030,000	8	3,391 / 22,649,000
90 bhp and over	6,751	80,256,000	9	4,673 / 51,255,000	8	4,075 / 43,573,000	8	3,766 / 40,019,000
Graders (except motor graders)	423	1,000,000	12	419 / 954,000	10	372 / 499,000	11	552 / 798,000
Pull-type	154	187,000	..	.... /	5	239 / 252,000	..	.... / .....
All other types	269	813,000	..	.... /	5	133 / 247,000	..	.... / .....
Loaders, portable conveyor-type	105	1,339,000	5	151 / 1,635,000	5	220 / 2,290,000	6	278 / 2,586,000
Rippers and rooters	2,343	3,124,000	14	1,815 / 2,305,000	13	877 / 1,203,000	15	1,026 / 1,082,000
Rollers	5,952	22,991,000	22	5,668 / 19,902,000	20	4,473 / 15,632,000	24	4,505 / 15,531,000
Three-wheeled, self-propelled	712	5,016,000	6	642 / 4,127,000	5	622 / 3,987,000	7	565 / 3,554,000
Portable, self-propelled	609	2,251,000	7	438 / 1,298,000	6	279 / 750,000	5	335 / 867,000
Tandem, self-propelled	2,040	9,595,000	9	1,866 / 8,206,000	10	1,521 / 6,528,000	11	1,915 / 7,495,000
Tamping and sheepsfoot	1,481	3,445,000	10	1,327 / 2,855,000	11	1,024 / 1,865,000	14	786 / 1,465,000
Pneumatic, drawn	1,110	2,684,000	8	1,395 / 3,416,000	7	1,027 / 2,502,000	7	904 / 2,150,000
Total—Road-construction Machinery	....	$191,960,000	70	.... / $151,410,000	60	.... / $118,970,000	66	.... / $119,674,000
Construction machinery for mounting on tractors								
Cranes	....	.....	6	365 / 2,482,000	6	317 / 1,786,000	5	285 / 1,693,000
Shovel-type loaders	14,666	46,121,000	22	16,887 / 37,201,000	19	11,916 / 26,135,000	20	10,451 / 24,000,000
Dozers, cable, angle and bull	11,224	17,351,000	8	7,719 / 14,727,000	12	6,608 / 11,100,000	12	8,006 / 13,198,000
Dozers, hydraulic, angle and bull	11,648	26,014,000	15	11,956 / 24,238,000	16	11,699 / 23,947,000	18	13,077 / 26,300,000
Cable power-control units	11,889	17,879,000	7	12,035 / 15,806,000	3	8,916 / 10,909,000	9	11,267 / 13,249,000
Total—Construction machinery	....	$107,365,000	32	.. .. / $94,454,000	31	.... / $73,877,000	37	.... / $78,440,000
Wheel-type tractors, off-highway type[2]	5,213	92,608,000	6	4,021 / 62,658,000	6	3,019 / $46,801,000	7	2,944 / $43,681,000
Tracklaying tractors[2]	54,798	453,853,000	10	48,891 / 359,443,000	10	40,374 / 267,918,000	11	50,597 / 328,696,000
Trucks, trailers and wagons off-highway type	666	6,461,000	10	3,329 / 46,527,000	11	1,519 / 25,126,000	8	1,970 / 31,184,000
Portable well and blast-hole drills	1,184	8,534,000	5	1,166 / 8,021,000	4	1,176 / 8,615,000	4	907 / 8,002,000
Other excavating and earthmoving equipment	....	2,901,000	6	.... / 2,190,000	6	.... / 2,045,000	4	.... / 2,336,000
Total	....	$863,682,000	..	.... / $724,703,000	..	.... / $543,352,000	..	.... / $612,013,000

(1)—Included with 45-89 bhp classification. (2)—Also included in table of "Tractor Shipments" shown in Motor Vehicle Section.

Oregon	10	1,052	5,247	703	1,334	2,988	5,837	9,539	18,376	57	992	4,190
Total—United States	244	15,710	$76,974	10,980	21,884	$44,165	$121,854	$121,074	$242,929	$6,850	13,926	$81,517

TIRES AND TUBES

Shipments, Production and Inventory of Car, Truck and Bus Tires

As reported by the Rubber Manufacturers Association

Year	Shipments: Original Equipment	Shipments: Replacement	Shipments: Export	Shipments: Total	Production	Year End Inventory
PASSENGER CAR TIRES						
1956	30,872,852	53,251,512	874,751	85,000,115	85,546,238	16,493,563
1955	42,574,053	50,189,250	966,406	93,729,709	97,223,165	15,963,038
1954	29,741,478	47,043,543	927,646	77,712,667	76,794,128	12,217,280
1953	33,098,490	45,874,056	806,199	79,778,745	81,430,817	13,043,064
1952	24,106,077	45,457,870	740,954	70,304,901	74,341,140	11,251,074
TRUCK AND BUS TIRES						
1956	4,547,875	8,894,228	882,532	14,324,635	14,859,457	3,377,991
1955	4,800,314	9,056,789	912,223	14,769,326	14,955,092	2,815,258
1954	3,591,223	8,111,034	825,601	12,527,858	12,346,811	2,544,705
1953	4,837,634	9,317,012	733,954	14,888,600	14,690,498	2,662,741
1952	5,377,635	8,884,074	779,007	15,040,716	16,069,975	2,859,156
TOTAL AUTOMOTIVE TIRES						
1956	35,421,727	62,145,740	1,757,283	99,324,750	100,405,695	19,871,554
1955	47,374,367	59,246,039	1,878,629	108,499,035	112,178,257	18,778,296
1954	33,332,701	55,154,577	1,753,247	90,240,525	89,140,939	14,761,985
1953	37,936,124	55,191,068	1,540,153	94,667,345	96,121,315	15,705,805
1952	29,483,712	54,341,944	1,519,961	85,345,617	90,411,115	14,110,230

Tire and Inner Tube Shipments

In Units and Their Value

As reported by the Industry Division, Bureau of the Census

	1954: Quantity	1954: Value	1947: Quantity	1947: Value
Pneumatic Tires (casings)				
Passenger car	76,712,000	$853,636,000	75,787,000	$670,039,000
Motorcycle	67,000	609,000	203,000	1,365,000
Truck and bus (incl. off-the-road)	12,552,000	520,168,000	17,172,000	536,708,000
Airplane	369,000	23,557,000	155,000	5,367,000
Tractor and implement	2,388,000	68,431,000	4,833,000	78,598,000
Industrial	1,147,000	5,878,000	1,237,000	5,160,000
Bicycle and single tube tires	7,311,000	7,790,000	9,417,000	9,456,000
Total—Pneumatic tires	.....	$1,480,069,000	.....	$1,306,693,000
Inner Tubes				
Passenger car	52,090,000	$74,118,000	65,878,000	$90,608,000
Motorcycle	64,000	87,000	(1)	(1)
Truck and bus (incl. off-the-road)	9,208,000	31,328,000	14,066,000	41,776,000
Airplane	257,000	2,125,000	94,000	467,000
Tractor and implement	2,589,000	7,279,000	3,894,000	10,179,000
Industrial	1,325,000	1,295,000	1,193,000	1,210,000
Bicycle	7,595,000	4,129,000	11,351,000	5,761,000
Total—Inner Tubes	.....	$120,361,000	.....	$150,001,000
Solid Tires				
Pressed on industrial and highway	314,000	$5,255,000	281,000	$3,525,000
Cured on industrial (2.00" or larger)	671,000	1,801,000	850,000	2,003,000
Bogie, idler and support rollers	286,000	4,986,000	(2)	(2)
Semi-pneumatic	28,904,000	8,743,000	498,000	602,000
Other solid	2,422,000	702,000	944,000	533,000
Total—Solid Tires	.....	$21,487,000	.....	$6,663,000
Total—Tires and Inner Tubes	.....	$1,621,917,000	.....	$1,463,357,000

(1)—Included with bicycle inner tubes. (2)—Included with "other solid tires."

General Data for the Tire and Tube Industry

As reported by the Industry Division, Bureau of the Census

Region and State	1954: Establishments, number	1954: All Employees: Number	1954: All Employees: Payroll ($1,000)	1954: Production Workers: Number	1954: Production Workers: Man-hours (1,000)	1954: Production Workers: Wages ($1,000)	1954: Value added by manufacture ($1,000)	1954: Cost of materials, etc. ($1,000)	1954: Value of Shipments ($1,000)	1954: Capital Expenditures, New ($1,000)	1947: All Employees Number	1947: Value added by manufacture ($1,000)
Northeast	10	11,504	$57,654	9,472	19,338	$45,402	$136,260	$147,842	$284,102	$16,924	17,461	$117,362
Pennsylvania	6	5,412	25,614	4,596	9,092	21,122	72,117	79,128	151,245	9,464	8,290	55,336
North Central	20	56,613	267,378	44,016	77,443	193,584	419,749	526,239	945,989	33,399	71,771	355,898
Ohio	12	39,203	180,185	29,769	49,986	124,599	249,197	293,410	542,608	18,425	49,709	233,364
South	11	14,373	67,050	12,137	24,484	55,093	190,679	208,440	399,119	7,951	15,846	115,987
West	9	10,157	49,524	8,351	16,715	40,024	97,857	114,664	212,521	9,155	10,579	60,918
Total United States	49	92,947	$441,607	73,976	137,980	$334,104	$844,545	$997,186	$1,841,732	$67,429	115,657	$650,165

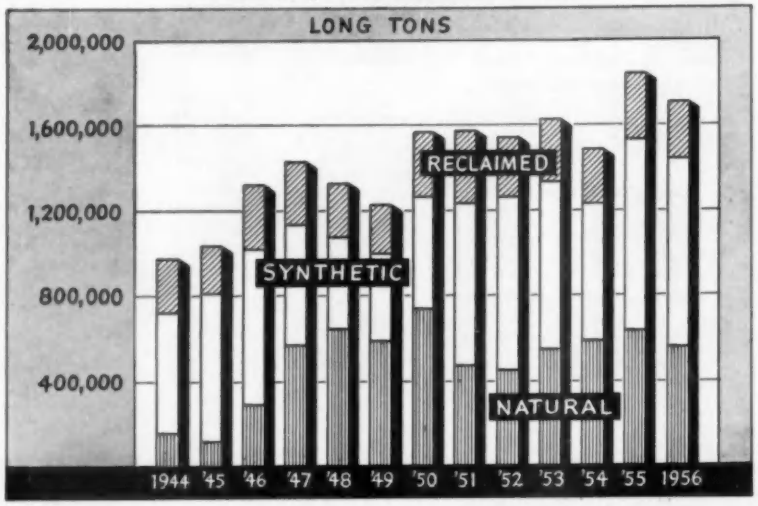
Equipment	....	2,901,000	6	....	2,190,000	6	....	2,045,000	4	....	2,336,000
Total	....	$863,682,000	..	....	$724,763,000	..	....	$543,352,000	..	....	$612,013,000

(1)—Included with 45-89 bhp classification. (2)—Also included in table of "Tractor Shipments" shown in Motor Vehicle Section.

MATERIALS

RUBBER

U. S. CONSUMPTION OF RUBBER
Natural, Synthetic and Reclaimed



Production, Consumption & Stocks of Synthetic Rubber

Long Tons

Month	Production	Consumption	Stocks, End of Month*
1956			
Jan.	93,522	78,480	141,732
Feb.	90,488	75,240	145,906
Mar.	94,389	77,888	150,995
April	91,602	74,682	155,410
May	93,740	76,396	162,682
June	85,296	67,816	171,196
July	88,031	58,196	188,813
Aug.	86,468	72,537	192,488
Sept.	90,602	69,205	200,793
Oct.	88,158	82,023	197,788
Nov.	83,514	71,526	199,334
Dec.	93,764	73,278	202,518
Total	....	....	....
Yearly Totals			
1955	970,468	890,366	136,319
1954	622,852	620,200	150,175
1953	848,461	771,800	175,845
1952	798,566	787,500	118,987
1951	845,160	758,700	129,952
1950	476,184	512,600	52,758
1949	393,696	397,100	98,042
1948	488,340	430,600	115,111

*Or end of year

U. S. Consumption of Natural, Synthetic and Reclaimed Rubber

Chemical and Rubber Division, Business and Defense Services Administration

All data are in Long Tons

Month and Year	Natural Rubber: Dry	Natural Rubber: Latex	Synthetic Rubber: S-Type	Synthetic Rubber: Butyl	Synthetic Rubber: Neoprene	Synthetic Rubber: N-Type	Synthetic Rubber: Total Synthetic	Total Natural and Synthetic	% of Total Natural and Synthetic Rubber: Natural	% of Total Natural and Synthetic Rubber: Synthetic	Reclaimed	Total All Rubber
January	46,975	6,776	65,376	4,223	6,684	2,198	78,480	132,231	40.6	59.4	25,827	158,058
February	43,886	6,399	62,366	4,155	6,430	2,289	75,240	125,525	40.1	59.9	25,571	151,096
March	43,602	6,438	64,458	4,515	6,542	2,373	77,888	127,928	39.1	60.9	26,176	154,104
April	41,753	5,693	62,179	4,228	6,125	2,150	74,682	122,128	38.9	61.1	23,999	146,127
May	43,103	5,239	63,629	4,285	6,379	2,103	76,396	124,738	38.8	61.2	23,560	148,298
June	38,467	5,171	56,390	4,026	5,536	1,864	67,816	111,454	39.2	60.8	20,560	132,014
July	33,498	4,855	48,907	3,316	4,435	1,538	58,196	96,549	39.7	60.3	18,099	114,648
August	40,326	6,374	59,756	4,102	6,554	2,125	72,537	119,237	39.3	60.8	21,498	140,735
September	37,946	6,233	57,135	4,044	6,057	1,969	69,205	113,384	39.0	61.0	20,242	133,626
October	44,363	7,825	67,399	4,780	7,478	2,366	82,023	134,211	38.9	61.1	23,946	158,157
November	36,515	6,431	58,692	4,093	6,676	2,065	71,526	114,472	37.5	62.5	20,832	135,304
December	38,579	6,648	61,503	3,848	5,991	1,936	73,278	118,505	38.2	61.8	20,728	139,233
Total—1956	489,013	74,082	727,789	49,615	74,887	24,976	877,267	1,440,362	39.1	60.9	271,038	1,711,400
Total—1955	548,322	86,478	741,997	53,991	72,876	26,035	894,899	1,529,699	41.5	58.5	312,781	1,842,480
Total—1954	520,354	75,931	500,345	61,464	57,203	17,715	636,727	1,233,012	48.4	51.6	249,049	1,482,061
Total—1953	486,098	67,375	624,181	77,826	65,909	16,929	784,836	1,338,509	41.4	58.6	285,050	1,623,359

Natural Rubber Imports, Consumption, Reexports and Stocks

Chemical and Rubber Division, Business and Defense Services Administration

All data are in Long Tons

Year	Dry: Imports	Dry: Consumption	Dry: Re-exports	Dry: Stocks, End of Yr.	Latex: Imports	Latex: Consumption	Latex: Stocks, End of Yr.
1956	457,505[1]	489,013	10,388[1]	103,885	65,352[1]	74,082	12,064
1955	542,420	548,322	10,611	96,902	92,754	86,478	13,203
1954	522,365	520,354	7,443	93,410	74,483	75,931	11,133
1953	572,104	486,098	8,376	98,784	75,511	67,375	13,532
1952	757,769	400,279	3,024	89,059	48,228	53,567	6,201

[1]—Eleven months' total.

U.S. Rubber Consumption by Tire and Tube and Other Industries

Chemical and Rubber Division, Business and Defense Services Administration

Year	BY TIRE AND TUBE INDUSTRY — Consumption in Long Tons: Natural	Synthetic	Reclaimed	Total	% of Total Rubber Consumption: Natural	Synthetic	Reclaimed	Total
1955	409,574	550,282	167,680	1,127,536	64.52	61.49	53.61	61.20
1954	286,284	391,035	125,812	803,131	64.78	61.41	50.52	60.94
1953	358,220	500,283	141,202	999,705	64.72	63.74	49.54	61.58
1952	303,208	539,386	147,969	990,563	66.81	66.84	52.85	64.25
FOR OTHER RUBBER PRODUCTS								
1955	225,226	344,617	145,101	714,944	35.48	38.51	46.39	38.80
1954	210,001	245,692	123,237	578,930	35.22	38.59	49.48	39.06
1953	195,253	284,553	143,848	623,654	35.28	36.26	50.46	38.42
1952	150,638	267,651	132,033	550,322	33.19	33.16	47.15	35.72

West	9	10,157	49,524	8,351	16,715	40,024	97,857	114,664	212,521	9,155	10,579	60,918
Total United States	49	92,947	$441,607	73,976	137,980	$324,104	$344,545	$997,186	$1,841,732	$67,429	115,657	$650,165

STEEL

Shipments of Steel Products by Market Classifications, 1953-56

All Grades including Carbon, Alloy, and Stainless Steel

As reported by the American Iron and Steel Institute

Consuming Industries	1956 Net Tons	1956 % of Total	1955 Net Tons	1955 % of Total	1954 Net Tons	1954 % of Total	1953 Net Tons	1953 % of Total
Automotive								
Vehicles and parts	13,744,303	16.51	11,877,436	14.02	7,560,625	11.97	8,681,313	10.83
Parts, accessories and supplies			6,325,973	7.47	3,901,398	6.18	5,518,336	6.88
Forgings	397,584	.48	518,471	.61	330,966	.52	464,126	.58
Tractors	785,785	.94	754,390	.89	452,830	.72	598,549	.75
Aircraft	134,721	.16	96,892	.11	88,848	.14	161,043	.20
Total—Automotive and Aircraft	15,062,393	18.09	19,573,162	23.10	12,334,667	19.53	15,423,367	19.24
Warehouses and Distributors	16,752,233	20.12	15,758,005	18.60	11,999,470	19.01	14,878,859	18.57
Construction, including Maintenance	10,441,126	12.54	9,681,778	11.43	8,634,987	13.67	9,918,203	12.37
Containers	6,818,361	8.19	6,723,074	7.94	5,870,618	9.30	6,051,214	7.55
Machinery, Ind. Equip. & Tools (less tractors)	4,245,814	5.10	3,944,634	4.66	3,064,208	4.85	3,730,055	4.65
Rail Transportation	4,226,654	5.08	3,520,849	4.16	2,457,297	3.89	4,787,830	5.98
Contractors' Products	4,074,577	4.89	3,982,161	4.70	2,969,812	4.70	3,324,218	4.15
Steel for Converting and Processing	3,776,559	4.54	3,753,381	4.43	2,452,703	3.88	3,513,976	4.38
Export	3,622,427	4.35	3,583,077	4.23	2,533,883	4.01	2,679,731	3.34
Electrical Machinery and Equipment	2,437,804	2.93	2,291,866	2.71	1,739,007	2.75	2,111,879	2.63
Other Domestic and Commercial Equipment	2,263,775	2.72	2,189,416	2.58	1,742,090	2.76	2,086,076	2.60
Appliances, Utensils and Cutlery	2,129,115	2.56	2,199,114	2.60	1,441,461	2.28	2,045,749	2.55
Bolts, Nuts, Rivets, and Screws	1,485,087	1.78	1,475,340	1.74	962,572	1.52	1,341,606	1.67
Forgings (Other than Automotive)	1,473,186	1.77	1,266,032	1.49	832,876	1.32	1,444,839	1.80
Agricultural	1,082,469	1.30	1,336,886	1.58	1,189,199	1.88	1,233,247	1.54
Oil and Gas Drilling	778,714	.94	792,767	.94	585,562	.93	755,714	.94
Shipbuilding and Marine Equipment	760,306	.91	601,234	.71	501,231	.79	872,209	1.10
Ordnance and Other Military	523,890	.63	856,527	1.01	964,440	1.53	2,690,880	3.36
Mining, Quarrying and Lumbering	349,508	.42	268,987	.32	201,624	.32	324,380	.40
Shipments of Non-Reporting Companies	947,180	1.14	919,154	1.07	675,019	1.08	937,861	1.18
Total Shipments	83,251,168	100.00	84,717,444	100.00	63,152,726	100.00	80,151,893	100.00

Shipments of Carbon, Alloy and Stainless Steel—by Market Classifications

As reported by the American Iron & Steel Institute

Consuming Industries	CARBON STEEL 1956* % of Total	CARBON STEEL 1955 Net Tons	CARBON STEEL 1955 % of Total	ALLOY STEEL 1956* % of Total	ALLOY STEEL 1955 Net Tons	ALLOY STEEL 1955 % of Total	STAINLESS STEEL 1956* % of Total	STAINLESS STEEL 1955 Net Tons	STAINLESS STEEL 1955 % of Total
Automotive									
Vehicles and parts	9.95	10,711,735	13.66	13.46	1,114,328	19.79	5.35	51,373	7.48
Parts, Accessories and Supplies	5.40	5,478,967	6.99	11.47	755,496	13.42	8.65	91,510	13.33
Forgings	.27	265,895	.34	3.46	252,443	4.48	.16	133	.02
Tractors	.90	671,773	.86	1.71	82,522	1.47	....	95	.01
Aircraft	.04	28,213	.04	1.30	46,300	.82	5.01	22,379	3.27
Total—Automotive and Aircraft	16.56	17,156,583	21.89	31.40	2,251,089	39.98	19.17	165,490	24.11
Steel for Converting and Processing	4.99	3,605,414	4.60	1.57	86,603	1.54	8.39	61,364	8.94
Forgings (Other than Automotive)	1.21	734,533	.94	9.88	517,513	9.19	2.91	13,986	2.04
Bolts, Nuts, Rivets, and Screws	1.77	1,383,878	1.76	1.57	82,113	1.46	1.29	9,349	1.36
Warehouses and Distributors	20.67	14,995,080	19.13	10.78	574,614	10.21	32.22	188,311	27.43
Construction, including Maintenance	12.91	9,598,444	12.24	1.95	79,085	1.40	.78	4,249	.62
Contractors' Products	5.37	3,940,115	5.03	.34	24,729	.44	2.67	17,317	2.52
Rail Transportation	5.18	3,358,660	4.28	3.33	156,945	2.79	.47	5,244	.76
Shipbuilding and Marine Equipment	.84	554,213	.71	1.21	44,762	.79	.34	2,259	.33
Oil and Gas Drilling	.73	582,424	.74	4.23	208,938	3.71	.18	405	.06
Mining, Quarrying and Lumbering	.42	239,464	.30	.59	29,108	.52	.07	415	.06
Agricultural	1.44	1,297,191	1.65	.58	39,231	.70	.15	464	.07
Machinery, Ind. Equip. & Tools	4.65	3,388,542	4.32	10.89	515,084	9.15	8.49	41,008	5.97
Electrical Machinery and Equipment	2.38	1,729,052	2.19	10.76	562,861	10.00	2.87	8,953	1.30
Appliances, Utensils, and Cutlery	2.82	2,129,465	2.72	.39	21,457	.38	7.18	48,162	7.02
Other Domestic and Commercial Equipment	2.97	2,152,364	2.75	.56	21,793	.39	2.40	15,259	2.22
Containers	9.41	6,689,865	8.53	.78	29,335	.52	.43	3,874	.56
Ordnance and Other Military	.56	761,301	.97	1.48	92,191	1.64	.53	3,035	.44
Export	4.16	3,433,252	4.38	3.82	125,064	2.22	3.19	24,761	3.61
Shipments of Non-Reporting Companies	.96	679,637	.87	3.47	166,973	2.97	5.27	72,544	10.58
Total—Shipments	100.00	78,401,477	100.00	100.00	5,629,513	100.00	100.00	686,449	100.00

*—Based on totals for nine months.

1952	303,208	539,386	147,969	990,563				

FOR OTHER RUBBER PRODUCTS

1955	225,226	344,617	145,101	714,944	35.48	38.51	46.39	38.80
1954	210,001	245,692	123,237	578,930	35.22	38.59	49.48	39.06
1953	195,253	284,553	143,848	623,654	35.28	36.26	50.46	38.42
1952	150,638	267,651	132,033	550,322	33.19	33.16	47.15	35.72

• MATERIALS •

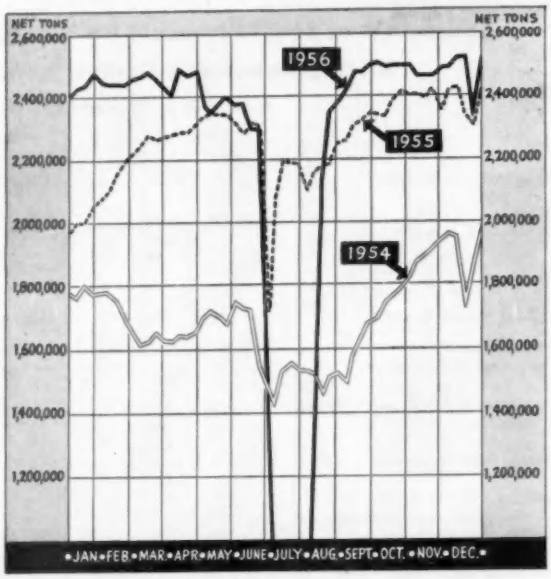
STEEL — ALUMINUM

Stainless Steel Per Car For 1956

	Pounds
Chrysler Corp.:	
Chrysler	34.00
De Soto	39.00
Dodge	24.95
Imperial	39.00
Plymouth	25.01
General Motors:	
Buick	14.98
Cadillac	10.75
Chevrolet	15.38
Oldsmobile	16.97
Pontiac	15.50*
Studebaker-Packard:	
Packard	18.45
Studebaker	21.12
Ford Motor Co.:	
Continental	50.00
Ford	20.00
Lincoln	55.00
Mercury	26.00

*Automotive Industries estimate. American Motors not reporting.

WEEKLY STEEL PRODUCTION



Average 1957 Car Will Use 38.1 Lb of Aluminum

Use of Aluminum in Pounds per Car and Total Consumption

CAR	Production (Per Cent of Total)†	Estimated Production (Cars)	Average Car* Estimated Production (Cars)	Average Car* Aluminum Usage (Pounds)	Automatic Transmission Estimated Production Cars	Automatic Transmission Aluminum Usage (Pounds)	Automatic Transmission, Power Brakes, Power Steering Estimated Production (Cars)	Automatic Transmission, Power Brakes, Power Steering Aluminum Usage (Pounds)	Estimated Total 1957 Car Consumption of Aluminum (Pounds)
Chevrolet 6	11.67	758,550	265,493	16.03	424,788	22.44	68,269	23.94	15,422,456
Chevrolet V8	16.80	1,092,000	382,200	20.37	611,520	26.78	98,280	28.28	26,941,278
Pontiac	5.85	380,250	19,012	15.42	247,163	36.42	114,075	37.92	13,620,565
Oldsmobile	7.51	488,150	1,464	20.61	76,640	41.43	410,046	44.75	21,554,927
Buick	9.21	598,650	21,551	21.86	307,706	43.27	269,393	44.77	25,846,268
Cadillac	2.32	150,800	.....	....	.....	....	150,800	58.14	8,767,512
Eldorado	.07	4,550	.....	....	.....	....	4,550	199.14	906,087
Brougham	.01	650	.....	....	.....	....	650	255.64	166,186
Total GM	53.44	3,473,600	689,720	18.61	1,667,817	30.82	1,116,063	43.89	113,225,259
Total Ford	28.46	1,849,900	556,979	21.78	96,804	35.98	21,918	36.36	5,469,646
Ford V8	20.59	1,338,350	468,423	22.14	709,325	39.51	160,602	39.89	44,802,730
Mercury	4.21	273,650	24,628	23.19	180,609	44.06	68,413	44.56	11,577,239
Lincoln	.83	53,950	.....	....	10,790	57.69	43,160	59.32	3,204,306
Continental	.02	1,300	.....	....	260	66.57	1,040	68.70	88,756
Total Ford	28.46	1,849,900	556,979	21.78	997,788	40.19	295,132	43.73	65,142,677
Plymouth 6	2.30	149,500	48,289	18.17	89,251	52.56	11,960	66.54	6,364,262
Plymouth V8	5.35	347,750	112,323	27.18	207,607	61.58	27,820	75.56	17,939,457
Dodge 6	.24	15,600	1,560	14.98	9,360	54.59	4,680	68.57	855,239
Dodge V8	3.18	206,700	20,670	21.94	124,020	61.55	62,010	75.53	12,770,546
De Soto	1.74	113,100	.....	....	45,240	83.28	67,860	97.26	10,367,651
Chrysler	1.48	96,200	.....	....	28,860	91.87	67,340	105.85	9,779,307
Imperial	.32	20,800	.....	....	.....	....	20,800	129.08	2,684,864
Total Chrysler	14.61	949,650	182,842	24.10	504,338	63.53	262,470	92.64	60,761,326
Nash	.32	20,800	.....	....	16,640	57.38	4,160	58.98	1,200,160
Hudson	.13	8,450	.....	....	6,760	61.08	1,690	62.68	518,830
Rambler 6	.78	50,700	12,675	36.25	30,420	53.36	7,605	54.96	2,500,651
Rambler V8	.58	37,700	9,425	42.63	20,735	53.84	7,540	55.44	1,936,178
Total AMC	1.81	117,650	22,100	38.97	74,555	55.09	20,995	56.55	6,155,819
Packard	.25	16,250	.....	....	16,250	32.88	.....	....	534,300
Studebaker Champ.	.27	17,550	7,020	10.24	10,530	14.24	.....	....	221,832
Studebaker Comm.	.54	35,100	3,510	15.47	31,590	19.47	.....	....	669,357
Studebaker Pres.	.59	38,350	1,918	15.57	36,432	19.57	.....	....	742,837
Golden Hawk	.03	1,950	.....	....	1,950	26.35	.....	....	51,383
Total S-P Corp.	1.68	109,200	12,448	12.54	96,752	21.33	.....	....	2,219,709
Grand Total	100.00	6,500,000	1,464,089	20.76	3,341,250	38.82	1,694,661	51.57	247,504,790

38.08 lb aluminum per 1957 car

Shipments of Non-Reporting Companies	.96	679,637	.87	3.47	166,973	2.97	5.27	72,544	10.58
Total—Shipments	100.00	78,401,477	100.00	100.00	5,629,518	100.00	100.00	686,449	100.00

*—Based on totals for nine months.

PLASTICS

Production of Synthetic Plastics and Resin Materials

As reported by the United States Tariff Commission

Year	Tons	Year	Tons	Year	Tons
1957	2,150,000	1951	1,215,704	1945	409,010
1956	2,056,000	1950	1,075,259	1944	392,068
1955	1,869,458	1949	745,555	1943	326,666
1954	1,412,901	1948	740,438	1942	213,365
1953	1,388,313	1947	625,849	1941	214,162
1952	1,166,962	1946	497,138	1940	138,407

Value of Plastic Materials Shipments

As reported by the Industry Division, Bureau of the Census

Product	Shipments 1954	1947
Cellulose plastics material	$82,210,000	$60,702,000
Vulcanized fiber	12,005,000	17,086,000
Regenerated cellulosic products	217,012,000	7,549,000
Vinyl and polyethylene unsupported film and sheeting	169,350,000	29,592,000
Synthetic resins	766,294,000	264,306,000
Plastics and resin materials, n.e.c.	211,973,000	177,313,000
Plastic materials, not specified by kind	703,000	3,035,000
Total	$1,459,547,000	$559,583,000

Weight Comparison Of Plastics

In A 1956 Composite Car

	Pound
Acetate and Butyrate	1.60
Acrylic	1.40
Nylon	0.25
Phenolics	2.20
Polyvinyl Butyral or Acetal	2.20
Vinyl—extended and molded	3.35
Others, Polyester, Copolymers, etc.	4.25
Total	15.25

Plastics in Passenger Cars

Typical plastic parts which are being used or can be used in passenger cars

ELECTRICAL SYSTEM

ACRYLIC
Dust Proof Lenses and Dials
Exterior Lenses

ACETATE and BUTYRATE
Control Knobs
Radio Grilles
Dial Pointers

VINYLS
Components

PHENOLICS
Insulation
Connectors

NYLON
Fuse Holder
Dome Light Lens
Sealed Beam Unit Lock Nut
Lamp Socket Bushing
Solenoid Insulator
Generator Insulator
Fuse Block Cover
Directional Switch
Starter Motor Insulator
Distributor Wire Clip
Automatic Starter Switch
Rotor for Headlight Foot Dimmer
Tail Lamp Connector
Horn Ring Insulator
Motor Commutator End Plate
Ignition Sleeve
Distributor Plate Separator
Distributor Cable Holder Retainer Rings
Coil Forms

ENGINE

PHENOLICS
Water Pumps
Radiator Strainers

NYLON
Rocker Arm Cover Seal
Line Connector
Spark Plug Gasket
Oil Pan Drain Plug Gasket
Water Pump Connector
Throttle Shaft Bearing
Crankshaft Thrust Bearings
Camshaft Bearings
Oil Pump Gears

ACCESSORIES

NYLON
Windshield Wiper Gear (Electric)
Windshield Wiper Valve (Vacuum Type)
Purse Hanger
Lubrication System
Winshield Washer T-Connector

POLYESTER
Heater and Air Conditioning Housings

FUEL SYSTEM

PHENOLICS
Carburetor Parts

NYLON
Carburetor Vacuum
Check Valve
Fuel Pump Valve
Carburetor Needle Valve
Complete Carburetor Body

TRANSMISSION

PHENOLICS
Clutch Disks

NYLON
Clutch Cross-Shaft Bearing
Speedometer Take-Off Gear
Speedometer Worm Gear
Speedometer Cable Sheath
Automatic Transmission
Governor Gear

TEFLON
Clutch Cross Shaft Support Bearing Seals

RUNNING GEAR

VINYLS
Valve Caps

PHENOLICS
Brake Linings

NYLON
Tire Valve Cap
Brake Pedal Bushing
Master Brake Cylinder Push Rod Bushing
Shock Absorber Piston Ring
Shock Absorber Guide Ring
Air Brake Poppet Valve
Steering Column Bushing
Spring Inserts
Ball Seats

BODY

ACRYLIC
Fender Guide Light
Decorative Medallions
Hood Ornaments
Paint

ACETATE and BUTYRATE
Moldings and Escutcheons
Handles and Knobs
Steering Wheels
Arm Rests
Buttons

COPOLYMERS
Wheel House Covers
Seat Backs
Seat Side Panels
Crash Panels
Headlining
Pillar Covers

POLYVINYL BUTYRAL
Safety Glass Interlayer

PHENOLICS
Water Proofing
Plated Parts

VINYLS
Upholstery
Scuff Pads
Socket Seals
Flexible Glazing
Door Panels
Arm Rest Padding
Water Proofing
Door Bumpers
Gaskets
Glass Seals
Mirror Backing
Instrument Panel Covering
Headlining
Sun Visors

REINFORCED PLASTICS
Station Wagon Trim
Car Bodies
Car Tops
Seat Frames
Instrument Panel
Convertible Top Cover
Fender Fins
Window Frames

NYLON
Door Hinge Bushing
Window Roller Washer
Door Striker Wedge
Front Seat Back Stops
Bearing and Bushing for Convertible Top Mechanism
Radio Aerial Actuating Cable and Gear
Window Regulating Gear
Convertible Top Actuating Cable Jacket
Bushings and Washers
Power Seat Regulator Gear
Upholstery
Carpet

MYLAR
Metalized Parts for Decorative Purposes
Upholstery Welting

POLYETHYLENE
Seat Cover Film

Golden Hawk	.03	1,950			1,950	26.35			51,383
Total S-P Corp.	1.68	103,200	12,448	12.54	96,752	21.33			2,219,709
Grand Total	100.00	6,509,000	1,464,089	20.76	3,341,250	38.82	1,694,661	51.57	247,504,790

38.08 lb aluminum per 1957 car.
*—Average car refers to composite car body model with aluminum weight distributed, but without automatic transmission, power brakes, or power steering. †—Based on 1955 production. Source: Aluminum Company of America.

Copper, Brass and Bronze Usable in 1957 Passenger Cars

Including Standard and Optional Parts

Parts	Pounds
BODY PARTS	
Springs, vent tube, washers, gaskets, screws, rivets, etc.	.47
Underplating	.51
Windshield wiper assembly	.19
ACCESSORIES	
Windshield washer parts	.06
Clock parts	.25
Cigarette lighter	.06
Radio parts	1.50
Heater and defroster parts	3.00
Air conditioning	30.00
Power seats	1.50
Power windows	1.68
Convertible top motors	.64
FUEL SYSTEM	
Carburetor parts	.20
Fuel pump parts	.20
Fuel filter	.20
Automatic choke pipe	.15
Tubing and fittings	.63
Air cleaner wood	.75
ENGINE	
Bearings	.50
Oil filter parts	.15
Crankcase breather assembly	.13
Distributor vacuum control tube	.16
Miscellaneous	.23
COOLING SYSTEM	
Radiator	15.00
Cap, water pump parts, drain cock	.73
Automatic transmission cooler	3.00
TRANSMISSION	
Conventional	.70
Automatic	3.50
RUNNING GEAR	
Conventional brakes	.38
Power brakes	.76
Propeller shaft	.13
Valve stems	.06
Power steering	.45
ELECTRICAL SYSTEM	
Wire and cables	3.00
Starter motor	6.00
Generator	6.00
Spark plugs	.13
Ignition coil	1.00
Distributor	.13
Ignition lock	.06
Voltage regulator	.25
Starter relay	.31
Gages and instruments	.35
Bulbs	.06
Fuses and fuse holders	.13
Flasher unit	.13
Horn parts with relay	1.64
Switches	.19
Circuit breaker	.09
Electrical connectors	.13
Total—All Parts	**87.57**

Estimated by Automotive Industries.

Storage Battery Shipments

As reported by the Industry Division, Bureau of the Census

Product	Shipments 1954 Units	1954 Value	1947 Units	1947 Value
Starting, Lighting and Ignition (S.L.I.) storage batteries				
Automobile, truck, farm tractor, and bus:				
Automotive type	30,351,000	$239,427,000	31,368,000	$234,946,000
Heavy-duty transport, motor coach and bus, and Diesel starting batteries	361,000	7,970,000	356,000	6,790,000
Aircraft	.....	3,986,000	.....	7,592,000
Marine	.....	1,193,000	.....	
Other motive power type	.....	6,263,000	.....	
Storage batteries, other than S.L.I. type				
Motive power type				
Industrial truck	.....	18,833,000	.....	9,663,000
Mining and other locomotive type	.....	1,491,000	.....	8,077,000
Other motive power	.....	547,000	.....	
Farm and emergency lighting storage batteries	.....	1,042,000	.....	2,119,000
Communication storage batteries (incl. radio, telephone, telegraph, and railroad signalling)	.....	10,801,000	.....	13,585,000
Railway Diesel starting batteries	.....	4,497,000	.....	
Railway air conditioning and car lighting	.....	4,839,000	.....	
Other storage batteries	.....	23,250,000	.....	
Parts and supplies for storage batteries	.....	11,978,000	.....	5,586,000
Total—Storage batteries	.....	**$336,112,000**	.....	**$293,358,000**

Auto Replacement Battery Shipments

1956

January	2,058,000
February	1,340,000
March	1,348,000
April	1,368,000
May	1,761,000
June	1,807,000
July	2,178,000
August	2,571,000
September	2,711,000
October	3,015,000
November	2,592,000
December	2,266,000
Total	25,015,000

Shipments of Industrial Furnaces and Ovens

As reported by the Industry Division, Bureau of the Census

Product	Shipments 1954 Units	1954 Value	1947 Units	1947 Value
Electric Industrial Furnaces and Ovens				
Metal melting furnaces, electric	274	$7,806,000	438	$2,884,000
Metal processing and heat treating furnaces, electric	1,881	19,673,000	1,792	11,385,000
Nonmetallic furnaces and kilns, electric	....	1,362,000	....	267,000
Ovens, industrial (except lehrs)				
Electric	....	4,500,000	....	858,000
Infra red	....	2,229,000	....	909,000
Lehrs, electric	....	(1)	....	(1)
Electric furnaces and ovens, n.e.c.	....	2,457,000	....	.....
Total—Electric industrial furnaces and ovens	....	$38,027,000	....	$16,303,000
Fuel-fired industrial furnaces and ovens	812	2,593,000	....	1,678,000
Metal melting furnaces, fuel-fired	2,590	50,264,000	2,086	15,499,000
Metal processing and heat treating	1,548	4,248,000	....	8,498,000
Nonmetallic furnaces and kilns, fuel-fired	2,957	21,961,000	1,782	10,687,000
Ovens, industrial (incl. lehrs), fuel-fired	....	2,417,000	....	.....
Fuel-fired industrial furnaces and ovens, n.e.c.	....	32,128,000	....	23,215,000
Parts, attachments, and components, sold separately	....	1,898,000	....	10,732,000
Industrial furnaces and ovens, n.e.s.				
Total—Fuel-fired furnaces and ovens	....	$81,483,000	....	$34,362,000
Total—Industrial furnaces and ovens	....	$153,536,000	....	$84,612,000

Gears

Index of Volume of New Orders

1947-1949 = 100

As reported by the American Gear Mfrs. Assn.

1956	
January	245.5
February	256.2
March	276.5
April	264.7
May	275.6
June	245.4
July	286.7
August	219.5
September	230.5
October	299.8
November	216.2
December	235.7
Average—1956	254.0
Annual Averages	
1955	199.2
1954	151.9
1953	165.8
1952	164.3
1951	221.4

Line Connector
Spark Plug Gasket
Oil Pan Drain Plug Gasket
Water Pump Connector
Throttle Shaft Bearing
Crankshaft Thrust Bearings
Camshaft Bearings
Oil Pump Gears

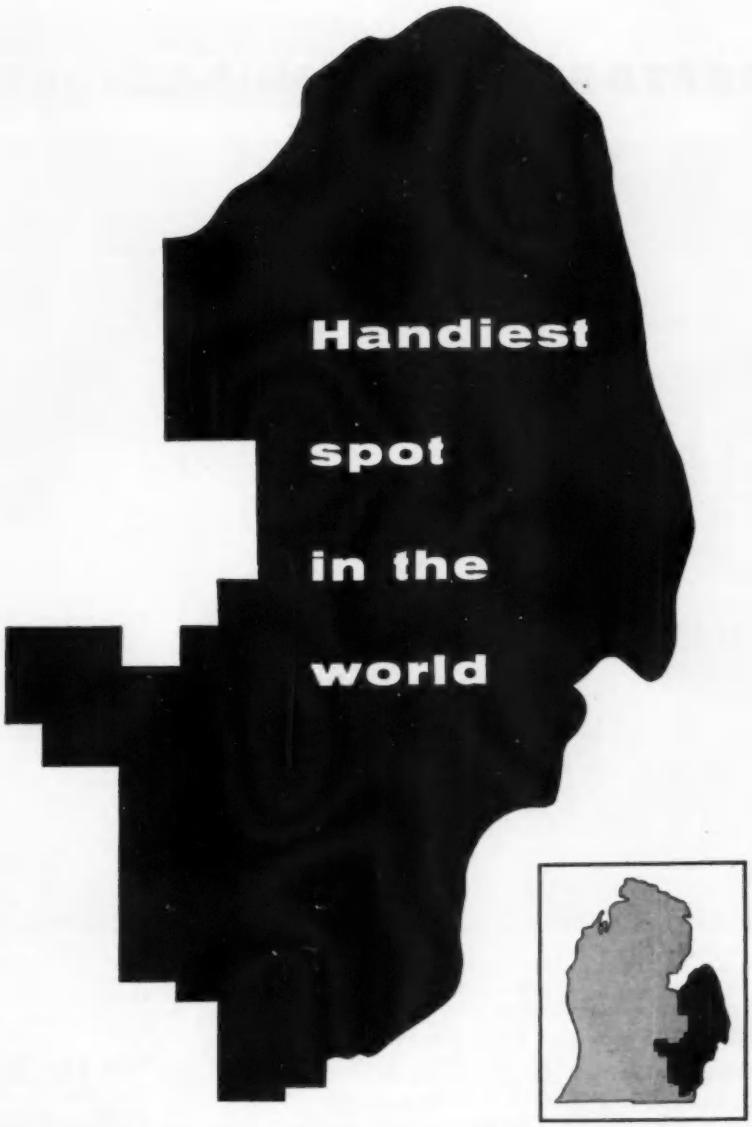
POLYVINYL BUTYRAL
Safety Glass Interlayer

PHENOLICS
Water Proofing
Plated Parts

Car Tops
Seat Frames
Instrument Panel
Convertible Top Cover
Fender Fins
Window Frames

Metalized Parts for Decorative Purposes
Upholstery Welting

POLYETHYLENE
Seat Cover Film



If you're considering a new plant site, take a good look at Michigan's "thumb" area. Handy spot to plant a business? You bet it is. The automotive center of the world offers you a unique combination of tangible advantages. Handy to excellent transportation and shipping facilities for both domestic and foreign markets, to advanced technology and research facilities, to skilled and unskilled labor. All these are plentiful and easily accessible in Southeastern Michigan—a good spot for business, and for you.

To help you get all the necessary information on industrial sites in this handy location, Detroit Edison offers a complete advisory service. Trained experts carefully study your requirements then give you detailed plans, specifications and photographs of the choicest industrial sites in Southeastern Michigan. Edison's *Plant Location Service* overlooks no details—its reports are accurate, complete and confidential. And this service costs you nothing.

If you are considering the expansion or relocation of your plant, use the expert facilities of Edison's *Plant Location Service*. Simply write or call . . .

THE DETROIT EDISON COMPANY

Plant Location Service • Area Development Division

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Ovens, industrial (incl. lehrs), fuel-fired	....	2,417,000	....	.....
Fuel-fired industrial furnaces and ovens, n.e.c.	....	32,128,000	....	23,215,000
Parts, attachments, and components, sold separately	....	1,898,000	....	10,732,000
Industrial furnaces and ovens, n.e.s.				
Total—Fuel-fired furnaces and ovens	....	$81,483,000	....	$34,362,000
Total—Industrial furnaces and ovens	....	$153,536,000	....	$84,612,000

(1)—Included with electric ovens.

Average—1956 .... 254.0

Annual Averages

1955	199.2
1954	151.9
1953	165.8
1952	164.3
1951	221.4
1950	94.3

DIRECTORY OF MANUFACTURERS

Following are the company names and addresses of manufacturers whose products are listed in the tables of specifications of complete motor vehicles, tractors, aircraft, and all types of gasoline and Diesel engines.

U. S. PASSENGER CARS

For details of their products see pages 118-135.

American Motors Corp., Detroit 32, Mich.
BUICK Motor Div., General Motors Corp., Flint 2, Mich.
CADILLAC Motor Car Div., General Motors Corp., Detroit 32, Mich.
CHEVROLET Motor Div., General Motors Corp., Detroit 2, Mich.
CHRYSLER Div., Chrysler Corp., Detroit 31, Mich.
CONTINENTAL, see Lincoln Div.
DE SOTO Div., Chrysler Corp., Detroit 31, Mich.
DODGE Div., Chrysler Corp., Detroit 31, Mich.
FORD Div., Ford Motor Co., Dearborn, Mich.
HUDSON, see American Motors Corp.
IMPERIAL, see Chrysler Div.
LINCOLN Div., Ford Motor Co., Dearborn, Mich.
MERCURY Div., Ford Motor Co., Dearborn, Mich.
METROPOLITAN, see American Motors Corp.
NASH, see American Motors Corp.
OLDSMOBILE Div., General Motors Corp., Lansing 21, Mich.
PACKARD Div., Studebaker - Packard Corp., Detroit 32, Mich.
PLYMOUTH Div., Chrysler Corp., Detroit 31, Mich.
PONTIAC Motor Div., General Motors Corp., Pontiac 11, Mich.
RAMBLER, see American Motors Corp.
STUDEBAKER Div., Studebaker - Packard Corp., South Bend 27, Ind.

BRITISH PASSENGER CARS

For details of their products see pages 136-137.

A. C. Cars Ltd., Thames Ditton, Surrey, England.
A. F. N. Ltd., Isleworth, Middlesex, England.
ALVIS Ltd., Coventry, England.
ARMSTRONG-SIDDELEY Motors, Ltd., Coventry, England.
ASTON MARTIN, see David Brown Industries, Ltd.
AUSTIN Motor Co., Ltd., Longbridge, Birmingham, England.
AUSTIN-HEALEY, see Donald Healey Motor Co., Ltd.
BENTLEY, see Rolls-Royce, Ltd.
CITROEN Cars Ltd., Slough, Bucks, England.
DAIMLER Co., Ltd., Coventry, England.
David Brown Industries, Ltd., Automobile Div., Feltham, Middlesex, England.
DELLOW Motors, Ltd., Alvechurch, Birmingham, England.
Donald Healey Motor Co., Ltd., Warwick, England.
FAIRTHORPE, Ltd., Chalfont St., Peter, Bucks, England.
FORD Motor Company, Ltd., Dagenham, Essex, England.
FRAZER-NASH, see A.F.N. Ltd.
HILLMAN, see Rootes Group.
HUMBER, see Rootes Group.
JAGUAR Cars, Ltd., Coventry, England.
JENSEN Motors Ltd., West Bromwich, England.

BRITISH PASSENGER CARS (Cont'd)

KIEFT Automobiles, Handsworth, Birmingham, England.
LAGONDA, see David Brown Industries, Ltd.
LEA-FRANCIS Cars, Ltd., Coventry, England.
M.G., see Nuffield Exports Ltd.
MORGAN Motor Co., Ltd., Malvern Link, Worcestershire, England.
MORRIS, see Nuffield Exports Ltd.
Nuffield Exports Ltd., Cowley, Oxford, England.
RILEY, see Nuffield Exports Ltd.
ROLLS-ROYCE, Ltd., Export Dept., London, W.1, England.
Rootes Group, Coventry, England.
ROVER Company Ltd., Solihull, Birmingham, England.
SINGER Motors, Ltd., Coventry & Birmingham, England.
STANDARD Motor Co., Ltd., Coventry, England.
SUNBEAM, see Rootes Group.
TRIUMPH, see Standard Motor Co.
VAUXHALL Motors Ltd., Luton, Bedfordshire, England.
WOLSELEY, see Nuffield Exports Ltd.

OTHER FOREIGN CARS

For details of their products see pages 137-139.

AUSTRALIA

General Motors-HOLDEN'S Ltd., Melbourne, Australia.

AUSTRIA

STEYR-DAIMLER-PUCH, Steyr, Austria.

CZECHOSLOVAKIA

Motokov, Praha 7, Czechoslovakia.
SKODA, see Motokov.

FRANCE

BUGATTI, Molsheim, Bas-Rhin, France.
Societe Anonyme Andre CITROEN, Paris 15, France.
FACEL VEGA S.A., Paris 8, France.
S.A. des Anciens Etablissements PANHARD & Levassor, Paris 19, France.
S.A. des Automobiles PEUGEOT, Paris 8, France.
Regie Nationale des Usines RENAULT, Billancourt, Seine, France.
Robert de ROVIN, Paris 17, France.
SIMCA Div., De Poissy, Paris 16, France.
Automobiles TALBOT - Darracq S.A., Seine, France.

GERMANY

Auto Union G.M.B.H., Dusseldorf, Germany.
Bayerische Motoren Werke Aktiengesellshaft (BMW), Munchen 13, Germany.
Carl F. W. BORGWARD, Bremen, Germany.
DKW, see Auto Union G.M.B.H.
DAIMLER-Benz A.G., Stuttgart-Unterturkheim, Germany.
FORD-Werke A.G., Koln-Niehl, Germany.
GOLIATH-Werk G.M.B.H., Bremen 11, Osterdeich 222, Germany.
LLOYD Motoren Werke GMBH, Bremen, Vulkanstr., Germany.
MERCEDES-BENZ, see Daimler-Benz A.G.

OTHER FOREIGN CARS (Cont'd)

Adam OPEL, Aktiengesellschaft, Russelsheim Am Main, Germany.
Dr. Ing. h.c. F. PORSCHE K.G., Stuttgart-Zuffenhausen, Germany.
VOLKSWAGENWERK GMBH, Wolfsburg, Germany.

ITALY

ALFA ROMEO, via M.U. Traiano, 33, Milano, Italy.
FERRARI Automobili, Modena, Italy.
FIAT, Turin, Italy.
ISO S.P.A. Autoveicoli, Milano, Italy.
LANCIA & CO., Torino, Italy.
Officiene Alfieri MASTERATI, Modena, Italy.
Automobili O.S.C.A., Bologna, Italy.

JAPAN

NISSAN Motor Co., Ltd., Shinkoyasu, Yokohama, Japan.
TOYOPET, see Toyota Motor Co., Ltd.
Toyota Motor Co., Ltd. Koromo-shi, Aichi-Ken, Japan.

SPAIN

Empresa Nacional De Autocamiones S.A., Madrid, Spain.
PEGASO, see Empresa Nacional De Autocamiones S.A.
Sociedad Espanola De Automoviles De Turismo, S.A., (S.E.A.T.), Barcelona, Spain.

SWEDEN

Svenska Aeroplan Aktiebolaget, Trollhattan, Sweden.
SAAB, see Swenska Aeroplan Aktiebolaget.
Aktiebolaget VOLVO, Goteberg 1, Sweden.

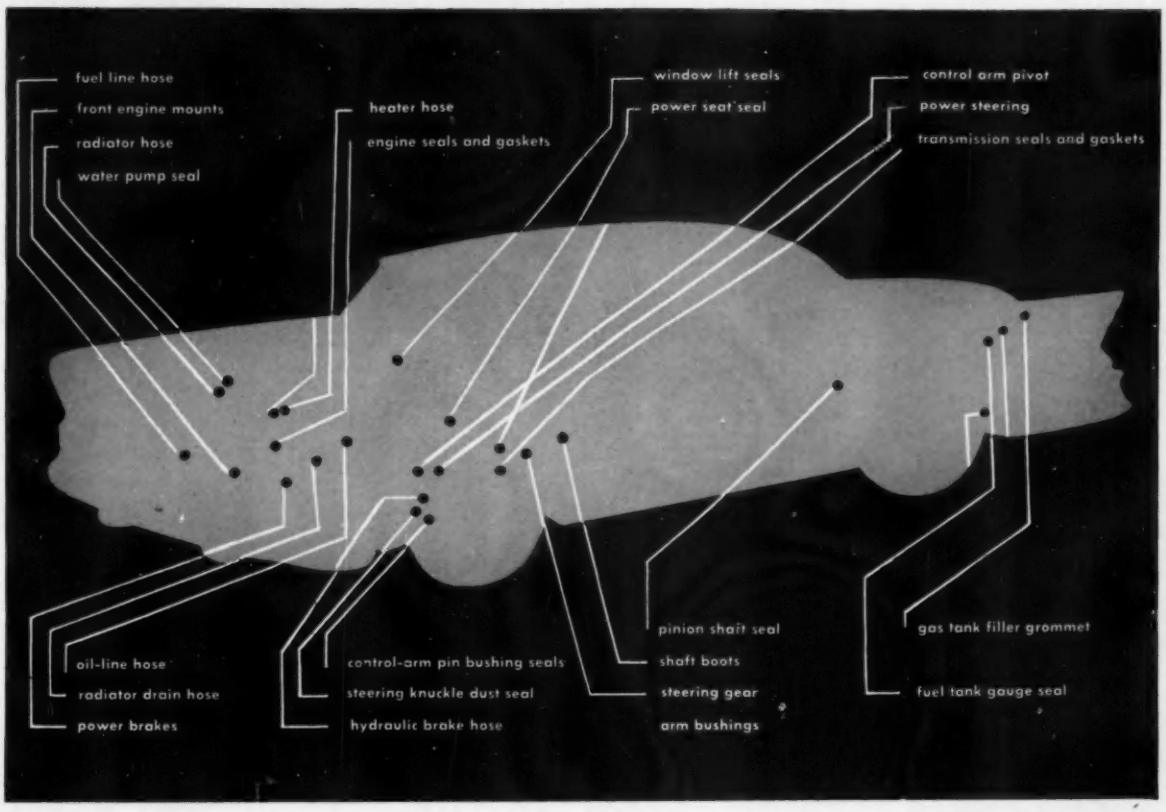
TRUCKS

For details of their products see pages 140-147.

American-Coleman Co., Littleton, Colorado.
AVAILABLE Truck Co., Chicago 47, Ill.
BROCKWAY Motor Trucks Div., Mack Trucks, Inc., Cortland, N. Y.
CHEVROLET Motor Div., General Motors Corp., Detroit 2, Mich.
COLEMAN, see American-Coleman Co.
DIAMOND T Motor Car Co., Chicago 23, Ill.
DIVCO Truck Div., Divco-Wayne Corp., Detroit 5, Mich.
DODGE Div., Chrysler Corp., Detroit 31, Mich.
DUPLEX Div., Warner & Swasey Co., Lansing 4, Mich.
FABCO, see F.A.B. Mfg. Co.
F.A.B. Mfg. Co., Oakland 8, Calif.
FEDERAL Motor Truck Co., Detroit 9, Mich.
FORD DIV., Ford Motor Co., Dearborn, Mich.
FWD, see Four Wheel Drive Auto Co.
Four Wheel Drive Auto Co., Clintonville, Wis.
KENWORTH Motor Truck Corp., Seattle 14, Wash.
MARMON-HERRINGTON Co., Inc., Indianapolis 7, Ind.
OSHKOSH Motor Truck, Inc., Oshkosh, Wis.

(Turn to page 320, please)

Naugatuck Paracril



Paracril...the oil-resistant, nitrile rubber suited to many automotive applications!

Spelled-out above are just a few applications for Paracril, Naugatuck's butadiene-acrylonitrile copolymer. Unequalled in resistance to oils, fuels and organic esters, aromatic hydrocarbons, chlorinated organic liquids and most hydraulic fluids, the Paracrils provide greater tensile strength with increased dimensional stability, high abrasive resistance, unusual low-temperature flexibility, and excellent resistance to oxidation.

Paracril® stocks are fully compatible with most other rubbers and plastic resins... can be calendered, extruded, or molded by standard rubber forming methods... are easily dissolved in solvents to make low-viscosity solutions for cement applications.

Why not write to us on your company letterhead for application and test data today?

Naugatuck Chemical

Division of United States Rubber Company
Naugatuck, Connecticut

US RUBBER

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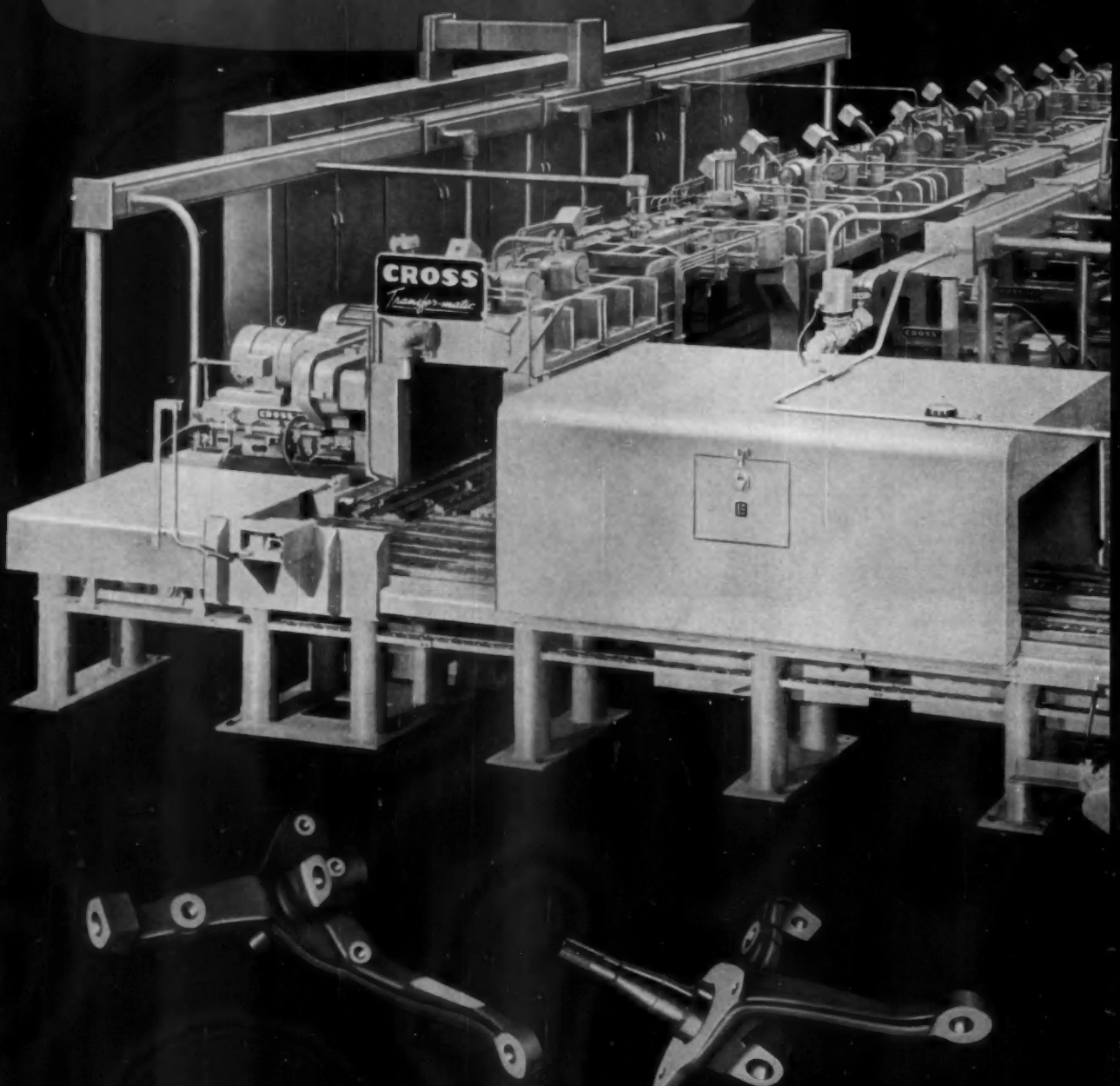
Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices

FRAZER-NASH, see A.F.N. Ltd.
HILLMAN, see Rootes Group.
HUMBER, see Rootes Group.
JAGUAR Cars, Ltd., Coventry, England.
JENSEN Motors Ltd., West Bromwich, England.
GOLIATH-Werk G.M.B.H., Bremen 11, Osterdeich 222, Germany.
LLOYD Motoren Werke GMBH, Bremen, Vulkanstr., Germany.
MERCEDES-BENZ, see Daimler-Benz A.G.
14, Wash.
MARMON-HERRINGTON Co., Inc., Indianapolis 7, Ind.
OSHKOSH Motor Truck, Inc., Oshkosh, Wis.
(Turn to page 320, please)

Mills, Drills, Reams, Threads Integral Front Wheel Spindle and Steering Arm



Established 1898

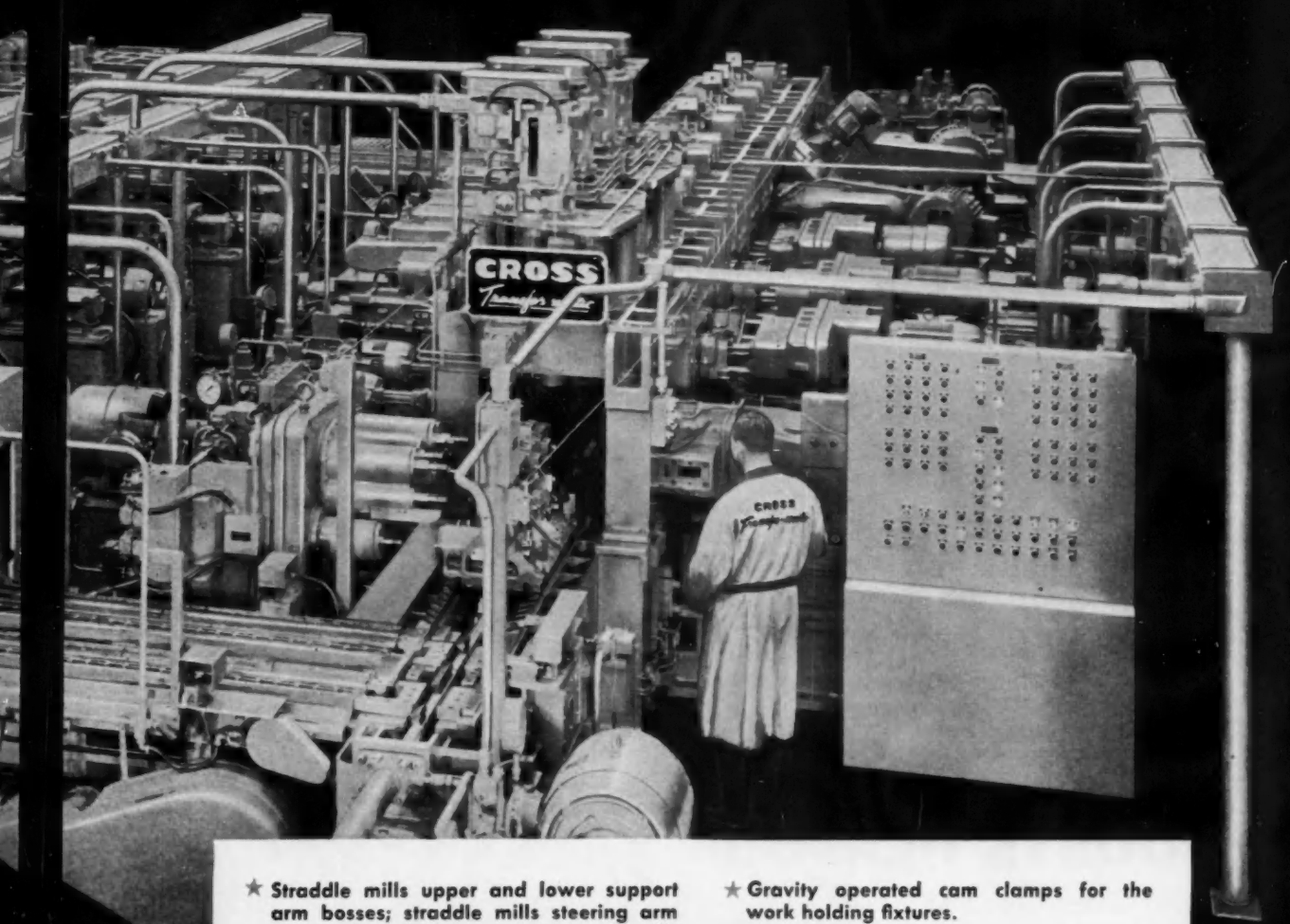
THE CROSS CO.

First in Automation

Naugatuck, Connecticut

IN CANADA: NAUGATUCK CHEMICALS, Elmira, Ontario • Cable Address: Rubexport, N.Y.
Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices

Another Transfer-matic by Cross



★ Straddle mills upper and lower support arm bosses; straddle mills steering arm boss; mills steering arm stop pad; mills spindle keyway; drills and taper reams upper and lower support arm holes and steering arm hole; drills, reams, chamfers and spotfaces two brake mounting plate holes; drills, counterbores, spotfaces, chamfers and reams brake anchor hole; drills spindle cotter pin hole; and threads wheel spindle.

★ 144 right and 144 left hand parts per hour at 100% efficiency.

★ Pallet type work holding fixtures locate parts from spindle bearing diameters.

★ Power wrench clamps work holding fixtures automatically.

★ Gravity operated cam clamps for the work holding fixtures.

★ Automatic transfer mechanism indexes right and left hand parts through all 17 stations in pairs.

★ Automatic indexing units turn fixtures 82° at Stations 11 and 17.

★ Cross modular unit construction provides flexibility for design changes.

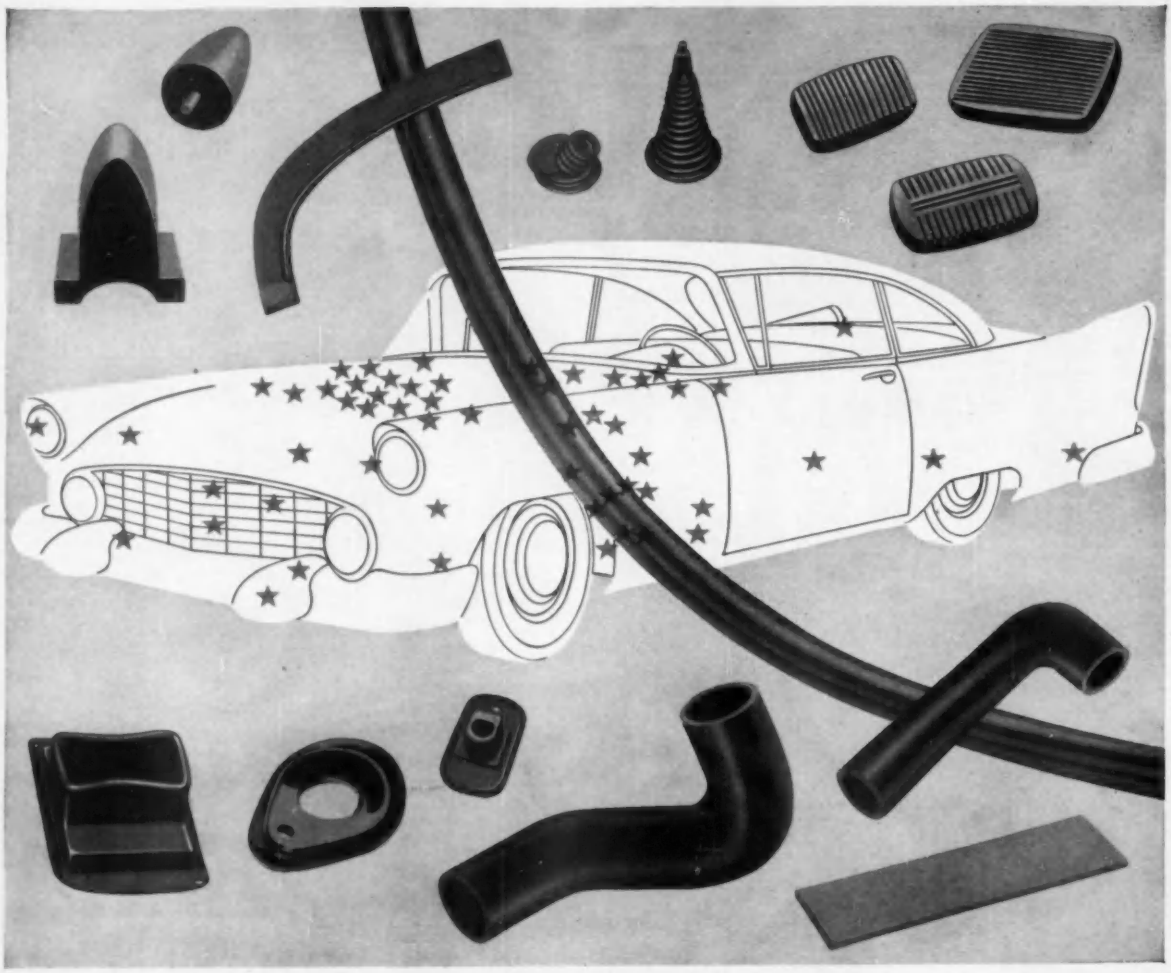
★ Other features: construction to JIC standards; hardened and ground ways; hydraulic feed and rapid traverse for milling, drilling and reaming; individual lead screw feed for threading; automatic fixture cleaning unit; complete interchangeability of all standard and special parts for easy maintenance.

Established 1898

THE CROSS CO.

First in Automation

PARK GROVE STATION • DETROIT 5, MICHIGAN



★ some of the more than 100 places where ENJAY BUTYL works, silently and dependably, helping to improve the performance of today's new cars.

ENJAY BUTYL—fabulous all-weather rubber BOOSTS PERFORMANCE IN '57 CARS

Molded into more than 100 parts, this super-durable, all-weather rubber helps provide a steadier, softer, more silent ride under even the most strenuous conditions of stress, weather change, and abrasive action. The dependability of all these parts contributes to the outstanding performance of the modern car.

Readily available in non-staining grades, Enjay Butyl rubber can be compounded into white and light-colored parts that combine beauty with top-notch performance. Low in cost, it out-performs and out-lasts all other rubbers formerly used, and may well be able to *cut costs* and *improve performance* in *your* product. For further information, and for expert technical assistance, contact the Enjay Company.

ENJAY BUTYL

Enjay Butyl is the greatest rubber value in the world . . . the super-durable rubber with *outstanding* resistance to aging • abrasion • tear • chipping • cracking • ozone and corona • chemicals • gases • heat • cold • sunlight • moisture.

ENJAY

Pioneer in Petrochemicals

ENJAY COMPANY, INC., 15 West 51st Street, New York 19, N. Y.

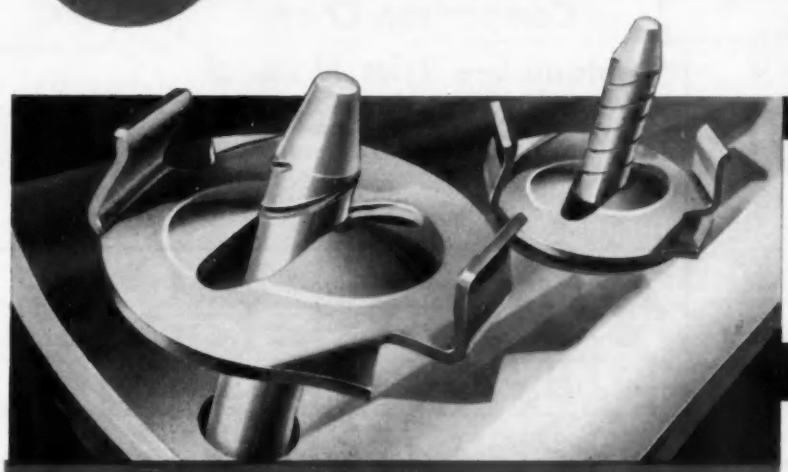
Akron • Boston • Chicago • Los Angeles • New Orleans • Tulsa

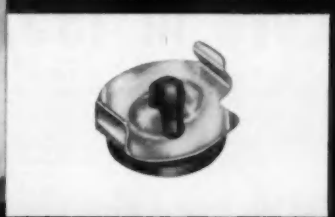
★ Power wrench clamps work holding fixtures automatically.

ture cleaning unit; complete interchangeability of all standard and special parts for easy maintenance.

DOT THREAD CUTTING FASTENER HOLDS TIGHT TO CURVED SURFACES

- Low Cost
- Re-Usable
- Self-Locking
- Vibration-Proof
- Spring Take-Up

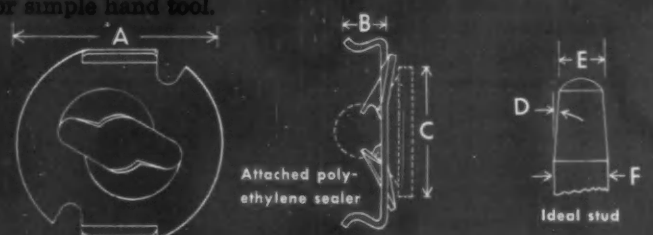


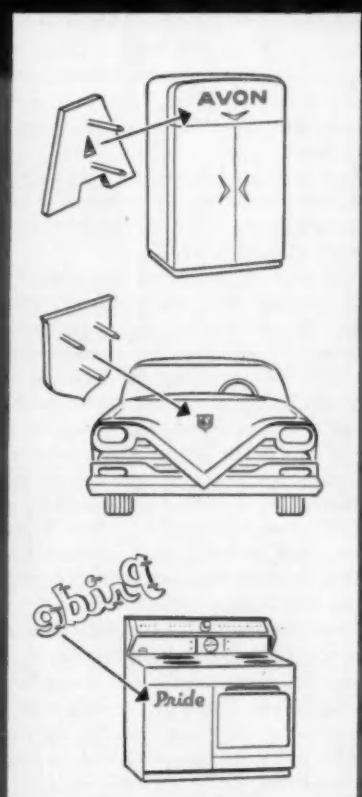


Specially designed to hold die-cast or cold-forged name plates, emblems and trim against sheet metal surfaces . . . DOT'S unique T.C.F. can be used in many other applications which require a spring take-up fastener that pulls up tight without backup on flat or contoured surfaces.

It cuts clean, deep threads on unthreaded studs, even those that are chrome plated. When used with its preassembled plastic sealer, T.C.F. makes a water-tight seal. The sealer *precedes* the fastener onto the stud so that it is not damaged by the thread-cutting process.

Available *in quantity*, with or without sealer, to fit 1/8" and 3/16" studs. Drawings available on request for magnetic tool or simple hand tool.





Nominal Sizes	A	B	C	D	E	F	Driving Torque	Ultimate Strength
1/8"	.560	.170	.450	6°/4°	.095 .085	.130 .125	7-10 Inch lbs.	200 lbs.
3/16"	.705	.200	.450	6°/3°	.160 .150	.192 .184	20 - 30 Inch lbs.	400 lbs.

Manufactured by
MONADNOCK MILLS SUBSIDIARY
San Leandro, Cal.

DOT T.C.F.
Patent Pending

Manufactured by
CARR FASTENER CO. DIVISION
Cambridge, Mass.

UNITED-CARR FASTENER CORPORATION

ENJAY
Pioneer in Petrochemicals
ENJAY COMPANY, INC., 15 West 51st Street, New York 19, N. Y.
Akron • Boston • Chicago • Los Angeles • New Orleans • Tulsa

with *outstanding* resistance to aging • abrasion • tear • chipping • cracking • ozone and corona • chemicals • gases • heat • cold • sunlight • moisture.

WHAT MATERIAL IS BEST

Let's look at the record in 1957!

This chart lists 17 of the more important trim parts that are common to the leading 1957 models of major American automobile manufacturers. A glance will show you the prominence of stainless steel; a closer look will give you an indication of where and why it is used. In *nine* of these applications only stainless steel is used by every car on the list using that trim part.

There is a good reason for this universal use of stainless steel—it looks beautiful doing the tough jobs, *and it lasts longer than any other type of bright work.*

Every year car buyers become a more discriminating and better educated market. Good looks and performance must go hand in hand to make an impression on today's prospect. That's where Allegheny Stainless Steel pays off. Its gleaming beauty is good for the life of the car—and then some—because it goes all the way through. No coatings or protective treatments are necessary to maintain its beauty. Unaffected by weather, road film, salts or detergents, it won't crack, blister, peel or rust. Stainless steel stands alone in its ability to stand up under road conditions that destroy other materials.

Check the record; Allegheny Stainless Steel, tough, beautiful, and long-lasting . . . makes cars better and keeps them better-looking longer. That's *good* for the manufacturer; *good* for the dealer; *good* for the buyer.

More and more, the trim look in cars is becoming the stainless look—because it's *good business!*

Comparison Chart
Automotive Trim Material

**Based on 1957 models covering most of the standard trim parts.*

TRIM PART	CAR A	CAR B
Frt. Windshield Reveal Mldg.	S	S
Rear Window Reveal Mldg.	S	S
Drip Mldgs.		
Garnish Mldgs.	S	S
Rocker Panel Mldgs.	S	S
Roof Side Rail		
Air Intake Screen		X
Grille	Y	X
Wheel Covers	S	S
Head Lamp Door	X	X
Windshield Wiper & Wiper Arm	S	S
Tail Light Assembly	S	X
Rear Fender Fin Mldg.	S	
Stone Guard		
Body & Hood Ornaments	X	X
Decorative Body Trim Panel	Y	
Body Side Mldgs.	S	S

S—Stainless Steel

X—Die Casting or Chrome-Plated Carbon Steel

Y—Other Metals (Not Plated)

Allegheny Ludlum Steel Corporation
Oliver Building, Pittsburgh 22, Pa.

FOR AUTOMOTIVE TRIM?

C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
S	S	S					S		S	S		S	S	S	S	S
		S						S	S	S			S			
			S	S	S		S									
	S	X	S	S	S	S							S			S
X	X	Y	Y	X	Y	Y	X	X	S	X	X	X	X	X	S	Y
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
X	X	X	Y	Y	X	X		X	X	X		X	X	X	X	X
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
X	X	X	S	X	X	X	X	X	X	X	X	X	X	X	X	X
		X	S	S				S					S	S		
		X	S	S	S	S										
X	X	Y	X	X	X	X	X	X	X	X	X	X	X	X	X	X
							Y	Y					Y			
S	S	S	S	S	S	S	S	S	S			S	S	S	S	S

WSW-6455

Make it BETTER—and LONGER LASTING—with

Allegheny Stainless

AL ALLEGHENY LUDLUM

Warehouse stocks carried by all Ryerson steel plants

Y—Other Metals (Not Plated)

EVERY TYPE—EVERY USE

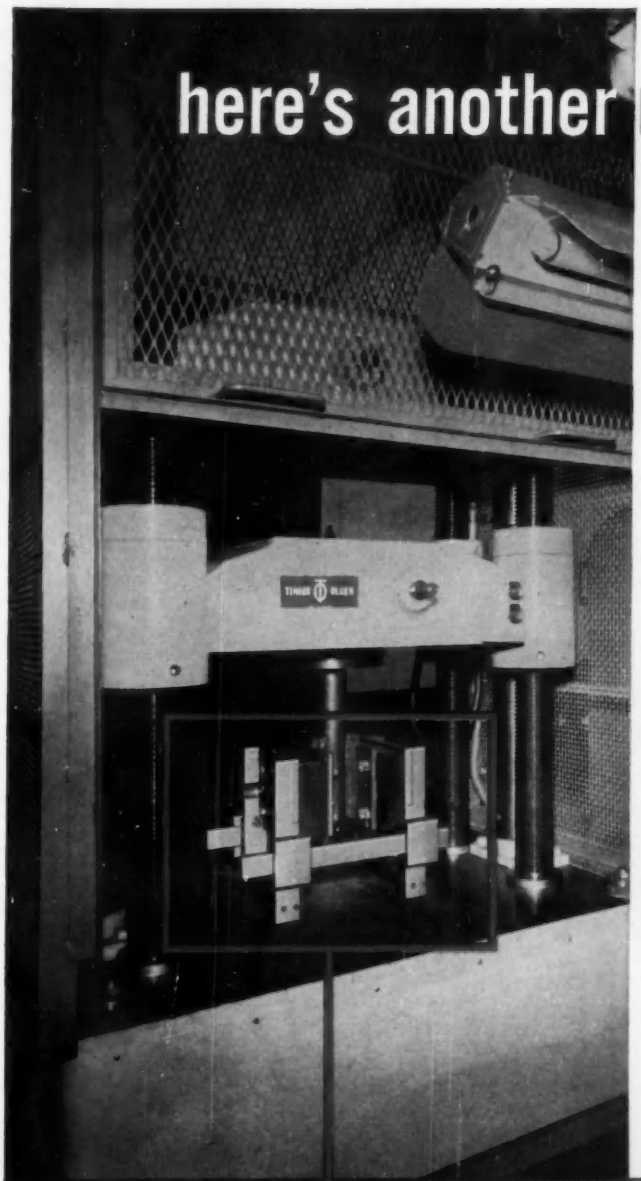
SKF®

- *Ball Bearings*
- *Cylindrical Roller Bearings*
- *Spherical Roller Bearings*
- *Tapered Roller Bearings* ("Tyson®")

7784

® Reg. U.S. Pat. Off. Tyson Bearing Corporation

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

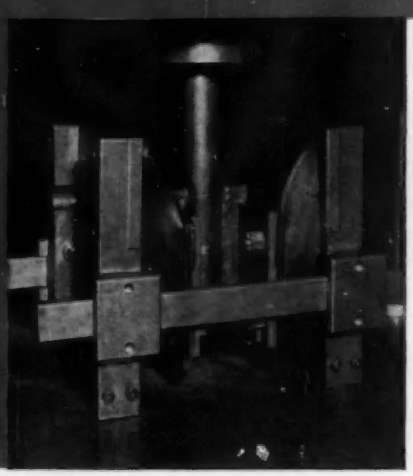


here's another LORD first in development of vibration mountings

In their constant search for improved vibration control, LORD engineers are not content to rely on ordinary testing techniques to prove the physical effectiveness of their designs. That's why they use this Tinius Olsen Testing Machine to put LORD-engineered mountings through exhaustive tests that subject these parts to loads up to many times their rated capacity.

This exceptional machine is comparable to one in the United States Bureau of Standards. It is electro-mechanical with variable speed drive, has a capacity of 200,000 pounds, and uses test speeds from .025 in. per min. to 10 in. per min. It provides for multiplanar tension and compression tests that prove not only the effectiveness of elastomers, but also the strength and life expectancy of bonded products.

The installation and use of this outstanding equipment is typical of LORD development efforts to provide the best in vibration control products—for the future as well as today. When your problem involves vibration control, call upon your LORD Field Engineer or the Home Office for advanced, proved engineering and vibration control products.



Unique test unit, especially designed for Lord, is used for both product development and quality control. High-precision versatility permits compression, tension and transverse loading at capacities to 200,000 pounds.

LORD BONDED RUBBER

designers and producers of bonded rubber products since 1924

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LOS ANGELES, CAL. - HOllywood 4-7393
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"In Canada—Railway & Power Engineering Corporation Limited"

LORD MANUFACTURING COMPANY • ERIE, PA.

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

STAINLESS STEEL MAKES THE DIFFERENCE

...its effect on modern trucking

Stainless steel sets new standards of performance for truck trailers. Experience proves that stainless outlasts and outwears other materials and is always easier to maintain.

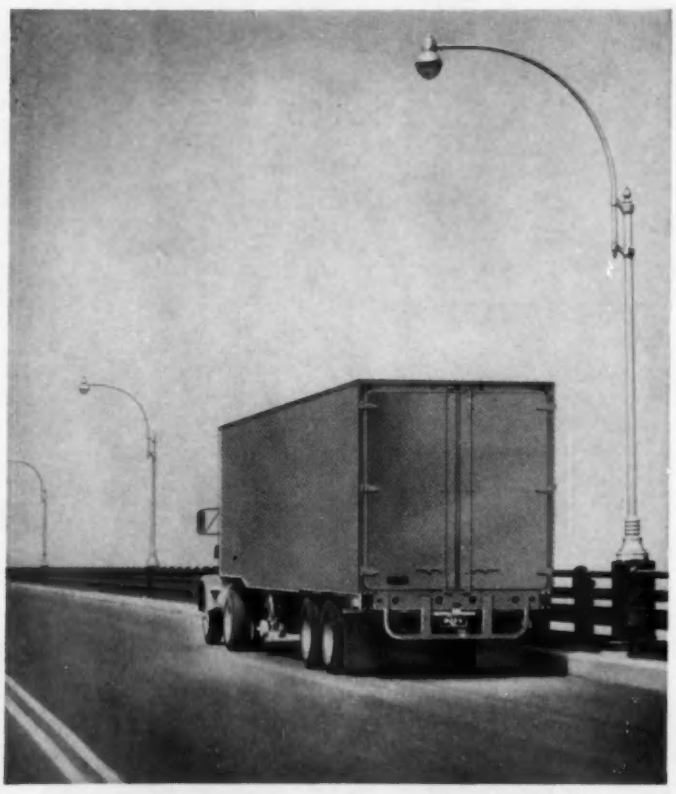
That's because stainless is practically immune to corrosion and rust. Its inherent toughness makes it hard to dent or scratch. Operating costs are less, too, because stainless needs no paint or special finish—the beautiful smooth surface is always quick and easy to clean. Extra strength lets you carry bigger payloads safely. No wonder more and more stainless steel units are going into service each year!

For more information about stainless steel and the many ways it can help improve your automotive products—see your stainless steel supplier or write ELECTROMET... leading producer of more than 100 alloys for the metal industries, including chromium and manganese used for making stainless steel.

ELECTRO METALLURGICAL COMPANY
A Division of
Union Carbide and Carbon Corporation
30 E. 42nd Street UCC New York 17, N. Y.
In Canada: Electro Metallurgical Company, Division of Union Carbide Canada Limited, Welland, Ontario

METALS DO MORE ALL THE TIME ...THANKS TO ALLOYS

Electromet
Trade-Mark
FERRO-ALLOYS AND METALS



With stainless steel you never compromise on strength, durability or appearance. Stainless makes bigger payloads possible, yet outlasts other materials.

TEAMWORK

SYSTEM OF YALE TRUCKS AND HOISTS ASSURES SMOOTH, INTRA-PLANT HANDLING OF MATERIALS

In metal-working plants where bulky, awkward and heavy loads must be moved at a steady pace, Yale Trucks and Hoists provide speed, safety and handling ease—three essential factors for an efficient handling operation. Yale Trucks have the power and stamina for heavy-duty, ramp handling. Their ease of operation permits the driver to maneuver his truck in congested areas and spot loads accurately.

For utmost efficiency in overhead handling, Yale offers many hoists suited to intra-plant operations. The Yale Cable King Electric Hoist, for example, handles up to 15 tons... gives quick-response pushbutton action... is equipped with Yale's exclusive air-cooling system to prevent overheating during continuous work cycles.

Find out how an integrated system of Yale Trucks and Hoists can speed production and at the same time increase the safety factor in your handling operations. For complete facts, send coupon today.

YALE*

*REG. U. S. PAT. OFF.

INDUSTRIAL LIFT TRUCKS AND HOISTS

Gasoline, Electric & LP-Gas Industrial Lift Trucks • Worksavers Warehousers • Hand Trucks • Hand and Electric Hoists

MAIL THIS COUPON TODAY

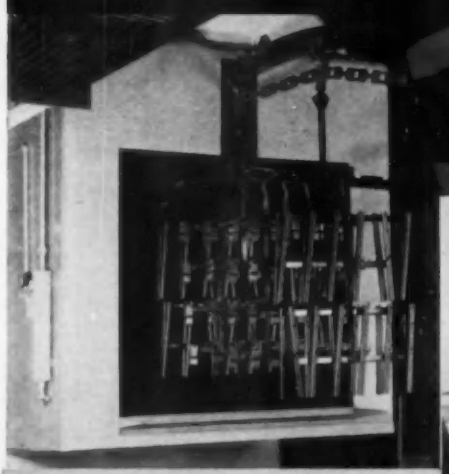
The YALE & TOWNE Manufacturing Co., Dept. A-73
Roosevelt Boulevard, Philadelphia 15, Pa.
Please send me complete information about
☐ Yale Gas Trucks in capacities from 2,000 to 10,000 lbs.
☐ Yale Electric Trucks in capacities from 1,000 to 150,000 lbs.
☐ Yale Hand and Electric Hoists in capacities from ½ to 40 tons.

Name_____
Company_____ Title_____
Street_____
City_____ Zone____ State_____

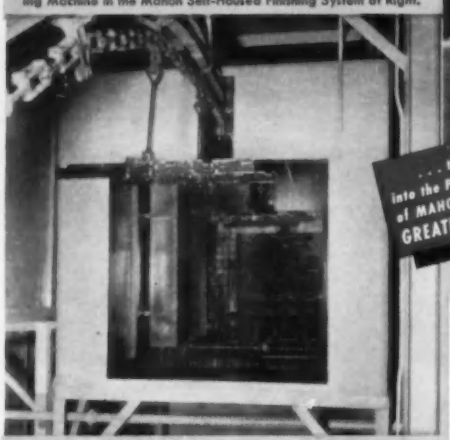
In Canada: write The Yale & Towne Manufacturing Co., St. Catharines, Ontario, Canada

COMPLETE *Finishing* SYSTEMS

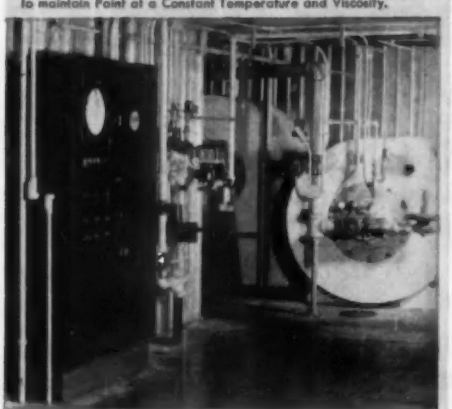
. . . for ENAMELS • LACQUER • PAINT • VARNISH



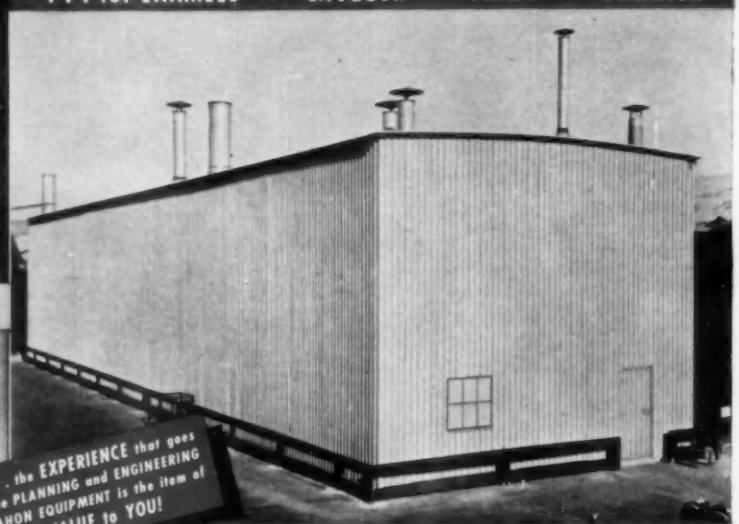
Truck Parts Entering Five-Stage Metal Cleaning and Rust Proofing Machine in the Mahon Self-Housed Finishing System at Right.



Entrance End of the Mahon Flow Coater. Equipment is provided to maintain Paint at a Constant Temperature and Viscosity.



Mahon Control Panel which Houses Temperature Recorders, Control Switches, Signal Lights and Automatic Safety Devices.



. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!

Complete Mahon Self-Housed Finishing System Installed Adjacent to Manufacturing Buildings at International Harvester Company's Plant, Fort Wayne, Indiana.

SELF-HOUSED Mahon Finishing System OUTSIDE of PLANT Solves Many SPACE PROBLEMS!

In industrial plants where adequate space is not available, or where floor space and headroom restrictions would seriously interfere with the planning and the engineering of an efficient and economical production finishing system, Mahon engineers recommend installation of a Self-Housed Finishing System on the roof of the plant, or outside the plant adjacent to manufacturing buildings . . . the installation illustrated above is an excellent example. In such installations, no restrictions are imposed by either floor space or headroom; consequently equipment can be planned and coordinated for maximum efficiency. In this particular finishing system, the equipment is installed on two levels . . . the Five-Stage Metal Cleaning and Rust Proofing Machine, the Flow Coater, the Ventilated Drip Enclosure, and the Control Panel with Recording Instruments, are located on the ground level. The Dry-Off Oven, Finish Baking Oven, Oven Heating Units, and Air Supply and Exhaust Equipment are located above on the second level. The roof and walls, which house the complete system, are an integral part of the Oven Construction. This is a highly satisfactory Mahon solution of one manufacturer's production painting problem. When you are confronted with a finishing problem, you, too, will want to discuss it with Mahon engineers . . . you'll find them better qualified to advise you on both methods and equipment requirements. See Sweet's Plant Engineering File for Information, and typical Mahon Installations, or write for Catalog A-657.

THE R. C. MAHON COMPANY • Detroit 34, Michigan

SALES-ENGINEERING OFFICES in DETROIT, NEW YORK and CHICAGO

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning, Pickling and Rust Proofing Equipment, Hydro-Filter Spray Booths, Dip and Flow Coaters, Filtered Air Supply Systems, Drying and Baking Ovens, Cooling Tunnels, Heat Treating and Quenching Equipment for Aluminum and Magnesium, and other Units of Special Production Equipment.

MAHON

BCA

SINGLE ROW, DEEP GROOVE RADIAL BEARINGS

. . for superior performance in even the toughest applications

The ability of these BCA Conrad type ball bearings to sustain combined radial and thrust loads or thrust loads alone—in either direction—even at extreme high speeds, stems from design features like these . . .

- Largest size balls are used to give optimum ratio of ball diameter to bearing race section at the points of heaviest stress.
- Deep, uninterrupted ball raceways . . . precision-ground to conform closely to ball curvature.
- High shoulders on inner and outer raceways support balls laterally and permit bearing to carry thrust loads equal to 100% or more of the radial load rating.

You can count on BCA bearings for the kind of performance you are looking for . . . and on BCA for the flexibility you need to fill both your routine and emergency bearing needs.

ENGINEERS: Send for a copy of BCA's valuable 100-page "Engineering Handbook." Write on your company letterhead. It's free!

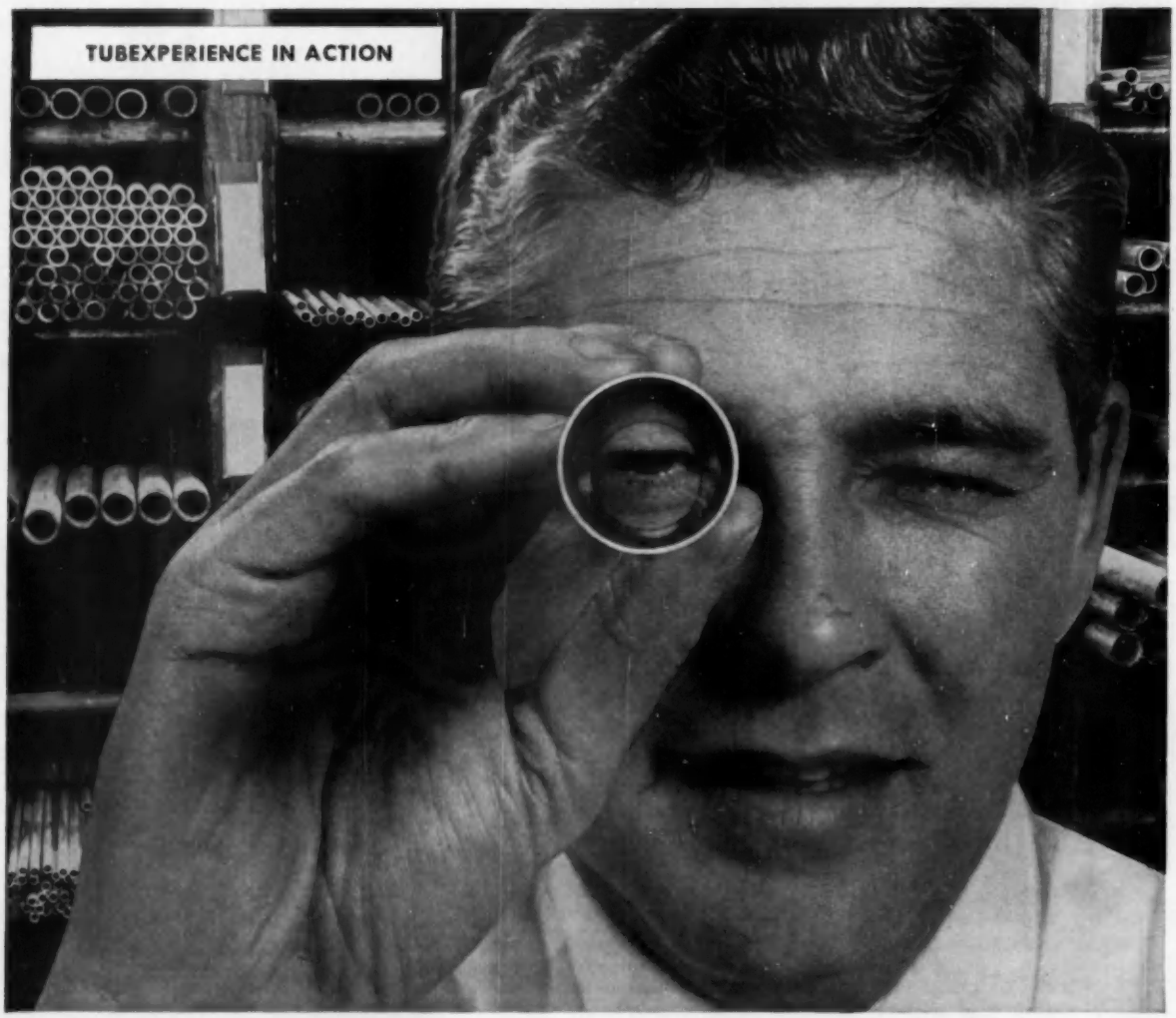
BCA
Bearings Company of America Division

Federal-Mogul-Bower Bearings, Inc.

Your eye tells you why

Superior (SAE)

assures you of a more



BRIGHT!

Take off the rust preventive and just glance at the ID of Superior hydraulic tubing. You'll know you've never seen hydraulic tubing with a brighter finish!

SMOOTH!

You can see this tubing is more than just extra-bright. It's really *smooth*—reduces turbulence and pressure drop in any hydraulic system.

CLEAN!

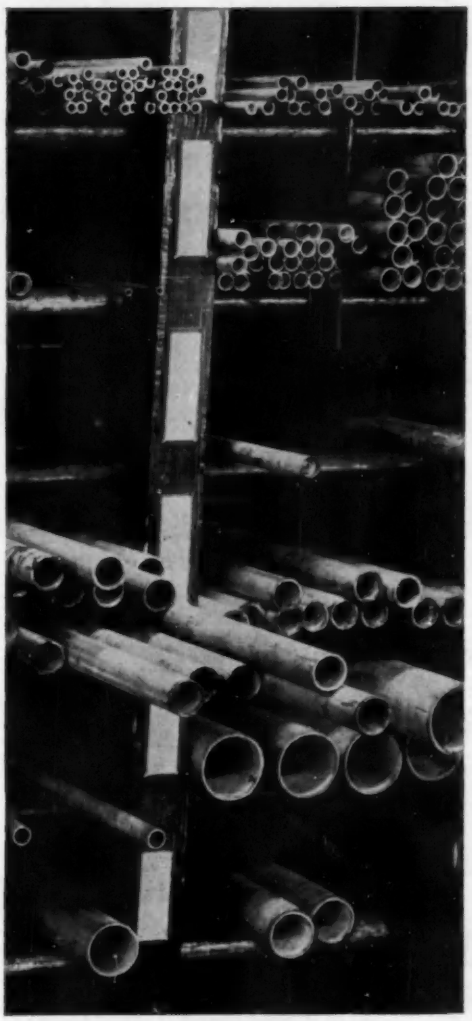
It's plain to see that this is bright, smooth, clean tubing under its protective coating that says "no" to rust and corrosion during shipment and storage.

TESTED!

And not just random sampling! Every length of Superior (SAE) hydraulic tubing is 100% hydrostatically tested at maximum working pressure.

HYDRAULIC STEEL TUBING

dependable, leakproof system



SUPERIOR (SAE) HYDRAULIC STEEL TUBING

is a product of refined tubing techniques, rigid quality control

COLD-DRAWN AND ANNEALED several times after initial reduction, Superior hydraulic tubing always reveals an excellent fine-grain structure under microscopic examination.

CONTROLLED ATMOSPHERE ANNEALING prevents carbon pickup, assures a maximum carbon content of only 0.12%. This results in non-aging, ductile tubing with bright, scalefree OD and ID.

FLARE INSPECTED on a basis of 35% minimum increase on OD, the tubing is highly ductile to permit easy hand bending without pinching, can be readily fabricated for any hydraulic application.

CAREFUL HANDLING of every order includes dipping tubing for rust prevention, wrapping in waterproof paper, and boxing for shipment.

AVOID CRITICAL FAILURES AND COSTLY DOWNTIME—SPECIFY SUPERIOR

Superior Seamless (SAE) Hydraulic Low Carbon Steel Tubing is available in cut, multiple or random lengths up to 30 ft., or longer in coiled form. For prompt, reliable service, call your nearest Superior distributor. For more information on hydraulic tubing, get your free copy of Bulletin 39. Write Superior Tube Company, 2011 Germantown Ave., Norristown, Pa.

Superior Tube

the big name in small tubing

NORRISTOWN, PA.

All analyses .010 in. to ⅛ in. OD—certain analyses in light walls up to 2½ in. OD

West Coast: Pacific Tube Company, 5710 Smithway St., Los Angeles 22, Calif. • RAymond 3-1331

for those little parts that play such a big part...

CALL ON AETNA

Why do so many leading automotive manufacturers consider Aetna their regular source of supply for vital component parts?

For one thing, they always get the best parts made—of highest quality and uniformity—and at the best price possible. But this isn't all they get for their money. They get PLUS values that carry no price tags.

For instance, because Aetna is such a versatile manufacturer, they get a wide choice of services, the time and money saving advantages of our vast store of tools and the stubborn kind of engineering help that invariably resolves parts problems the most economical way.

And because of Aetna's advanced quality control-inspection systems, rejections and returns are held to a minimum, saving time, trouble and extra expense for the customer.

See for yourself why Aetna's experience in parts, as well as in bearings, has made it the "can do" company. Just send us a sketch and description of YOUR specific parts problem. We'll promptly return the most economical proposal in keeping with your application and reliability requirements.

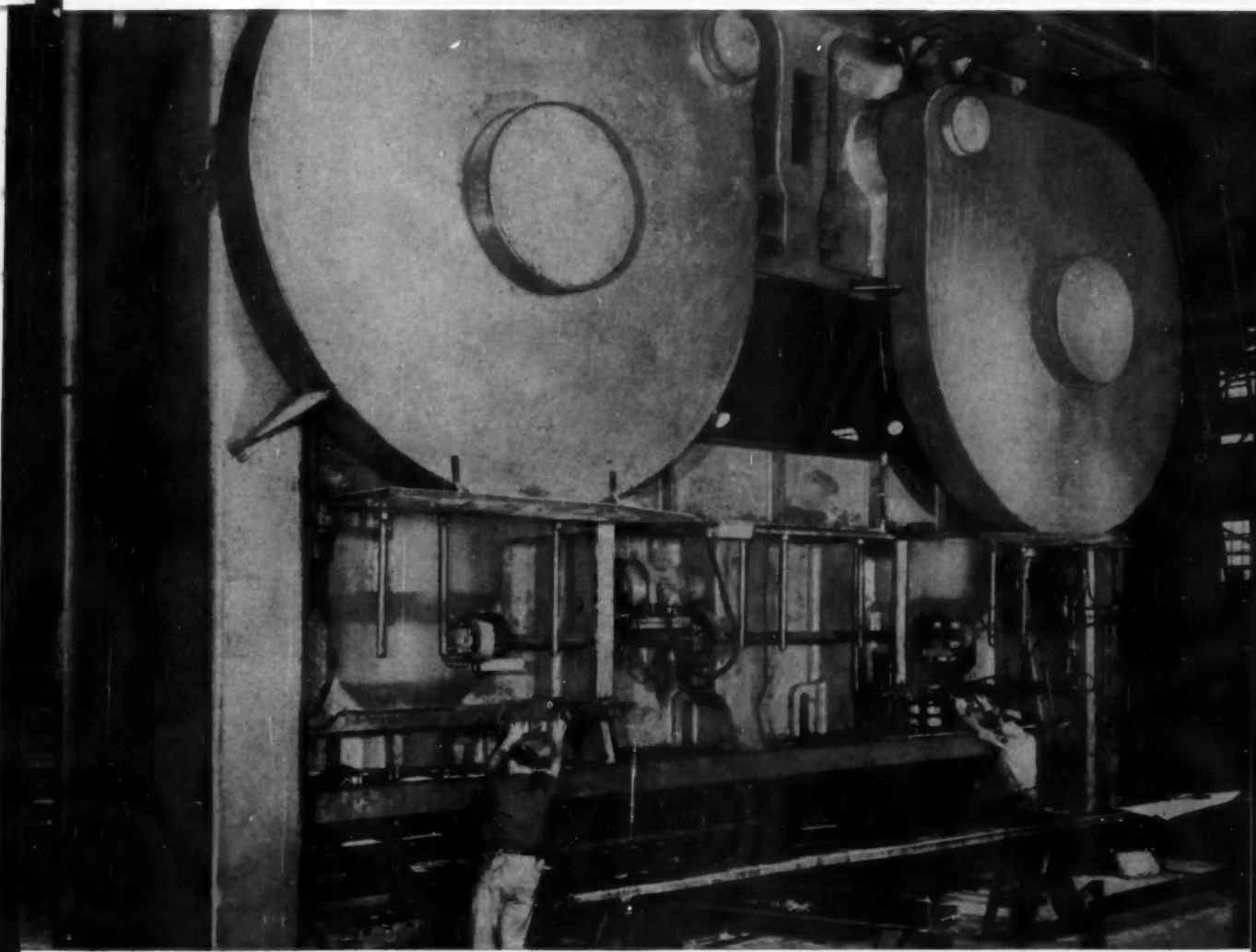
Aetna

BALL BEARINGS • ROLLER BEARINGS • PRECISION PARTS

AETNA BALL AND ROLLER BEARING CO.

Division of Parkersburg-Aetna Corporation

4600 Schubert Avenue • Chicago 39, Illinois
IN DETROIT—SAM T. KELLER, 1212 FISHER BUILDING



For the better part of 3½ years, this giant press—largest of its kind—has operated three shifts a day, seven days a week, doing with a single hit what formerly required two forming operations on a 3000-ton press.

4000-ton Hamilton press produces formed truck and bus rails from flat blanks in a single hit

By producing completely formed side rails from flat blanks in a single operation, this press has eliminated costly and time-consuming die changes, storage of partly formed rails between operations, and attendant materials handling problems. It does not give camber, or bow, to the rails and so this huge Hamilton press has eliminated the need for intermediate and final straightening operations.

Simplicity of lubrication is an important factor in the successful operation of this press. A special system, built in during installation, results in positive, efficient oiling of all moving parts with foolproof ease.

For all its 4000-ton capacity, the press weighs only 900 tons, stands only 43 ft. high, and is only 30 ft. 10 in. wide, 12 ft. 10 in. deep. It is driven by a 150 hp motor turning up 1200 rpm. The stroke is 22 in., operating speed is seven hits per minute.

Write to Hamilton Division, B-L-H Corporation, for full information and specifications on the line of Hamilton heavy duty presses.

Low-carbon sheet steel side rail blanks up to 26½ ft. long by 3/8 in. thick are fed into the press at the Cleveland Plant of Midland Steel Products Company. The operating crew varies from four to eight men, depending on size of rails being formed.

Hamilton Division Hamilton, Ohio

BALDWIN · LIMA · HAMILTON

Diesel engines • Mechanical presses • Can making machinery • Machine tools

BALDWIN BLH LIMA-HAMILTON

SR-4® LOAD CELLS OFFER YOU NEW ACCURACY—EASE—ECONOMY IN ALL INDUSTRIAL WEIGHING AND PROCESSING

Baldwin SR-4 Load Cells end the costly task of moving loads to and from a weighing unit. Now weigh right in process! Compact Baldwin transducers will measure any tension or compression force—shaft or jet engine thrust—cable tension; determine center of gravity, weight and balance. The applications are virtually unlimited. Weigh loads at rest or in motion. Measurements are accurate to better than $\pm 1/4\%$; repeatability is better than $\pm 1/10\%$.

Standard Baldwin SR-4 Load Cells range in capacity from 50 to 200,000 lb. The varying electrical signal from the SR-4 Bonded Wire Strain Gage, basic component of the load cell, can be fed to a wide variety of Baldwin recording or computing equipment.

Whatever your weighing problem, a B-L-H representative can help you. For more information, write today for your free copy of Bulletin 4301 on SR-4 Load Cells.

BALDWIN · LIMA · HAMILTON

Electronics & Instrumentation Division

Waltham, Mass.

SR-4® strain gages • Transducers • Testing machines

WAGNER ISO-BRITE COPPER . . .

"The efficiency of your new Iso-Brite Copper bath will enable us to put a $7500 'semi' to work on other jobs. We get a deposit of .0005" in a 15 minute cycle and could easily get .0006" to .0008" if required. Iso-Brite needs less maintenance than any bath within our experience." (Robert Hilfinger, Pres. Hilfinger Corp. to Jos. R. Wagner.)

Die cast automotive grill part ready for nickel and chrome.

doubles

SEMI-AUTOMATIC PLATING!

CONVERSION TO ISO-BRITE ELIMINATES ONE MACHINE . . .

The record at Hilfinger Corp., Toledo, Ohio, tells a simple story. This big, 115,000 sq. ft. die casting plant with a 200-man plating department originally required two semi-automatic plating machines for plating copper before nickel and chrome on large automotive die castings. New Wagner Iso-Brite Copper bath was installed eight months ago in one tank, replacing a leading proprietary copper bath, both machines being operated by a single generator. Excessive burning of the competitive plate resulted. The single machine charged with Wagner Iso-Brite Copper now turns out Hilfinger's entire production requirement to the customer's specification, permitting the surplus semi-automatic to be devoted to other production.

If reducing finishing costs is of interest to you, consider these reasons why this new Wagner-processed chemical is making records everywhere:

Wagner Iso-Brite Copper offers

1. Ease of control
2. High anode efficiency—copper cyanide additions virtually eliminated
3. Much heavier plate
4. Fine grained, dense, ductile, fully bright
5. Freedom from roughness
6. Wide operating range—temperature 135-165°; up to 60 amperes per square foot
7. High tolerance of organic contamination

Wire, phone or write for Bulletin 70.2 for full technical information on Iso-Brite Copper and the Wagner cadmium and zinc brighteners and chromate finishes. Please pass this advertisement along to your purchasing agent or plating superintendent. The Wagner man in your area will assist you with any plating problem.

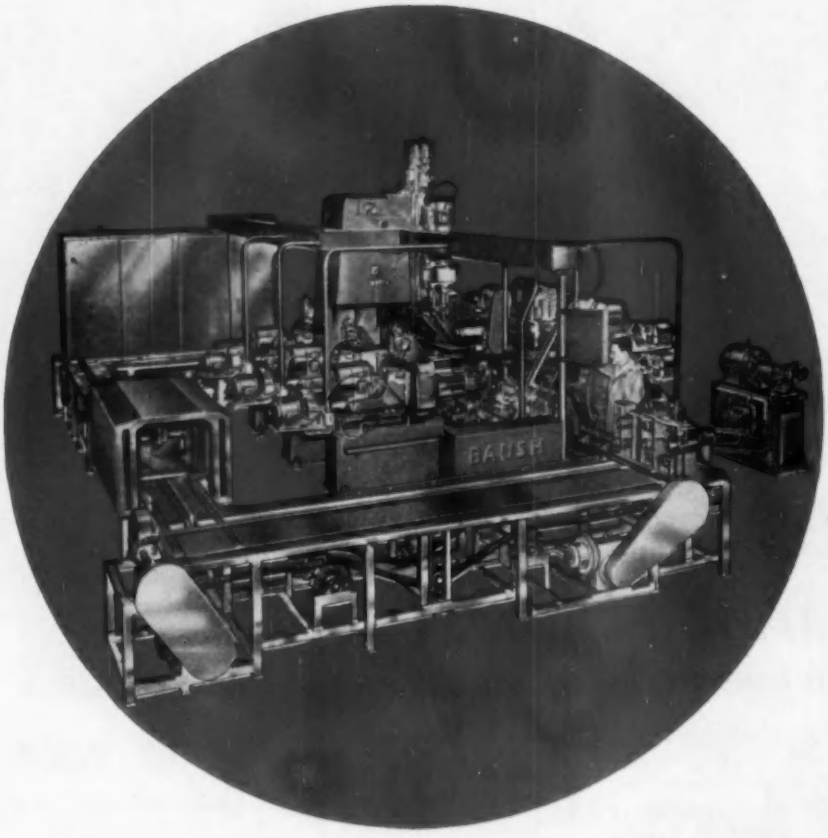
400 MIDLAND AVE., DETROIT 3, MICHIGAN
CHICAGO • CINCINNATI • CLEVELAND • INDIANAPOLIS • NEW YORK • ROCHESTER • GRAND RAPIDS

Wagner BROTHERS INC.

Your Production can be Increased with

BAUSH AUTOMATIC

Multi-Spindle Machine Tools



The Transfer is made up with — 5 Horizontal Model "S" mechanical leadscrew units, one of which is arranged with swivel to raise milling cutter from work • 1 Vertical Model "S" mechanical leadscrew unit • 2 Horizontal hydraulic units • 8 Fixed center heads with a total of 39 spindles • Single bar transfer mechanism • 5 Holding pallets with part held in 2 positions • Pallet conveyor • Electrical controls to J.I.C. Standards • 18 Motors

Automatic machines similar to the one illustrated more than pay for themselves through increased production at lower cost and with far less "down time" resulting from change overs, maintenance, etc.

Baush designed and built this 8-position, 4 station Transfer to drill, counterbore, countersink, chamfer, rough and finish bore, ream, face and turn 60 Chain Case Covers per hour at 100% efficiency for a leading engine manufacturer.

Why not let us show you how to adapt automatic tools and automation to increase your plant production.
There is no obligation in talking it over.

Write, wire or 'phone us — we'll gladly discuss your problems.

BAUSH machine tool co.
SPRINGFIELD 7, MASS.

B
BAUSH

NO GUESSWORK . . .

Between—Operation Cleaning or Paint Preparation Handled Best with a PETERS-DALTON POWER SPRAY WASHER

For more than a quarter century, PETERS-DALTON has been designing, engineering, building and installing Power Spray Washers to meet every industrial need. Tailor-made to the job they are built to perform, these P-D Power Spray Washers have proved their worth through long years of efficient production.

The illustration above is of a single stage steam heated P-D Power Spray Washer with high velocity blow-off. It was designed and built to clean miscellaneous small parts. Among its features are facilities built-in for cleaning the spray risers automatically with steam. This washer was delivered by P-D completely ready for operation.

Perhaps you have production needs that can be answered with a "tailor-made" machine such as the one shown here or requirements that call for installation and construction within your own plant. Regardless of your need or of its size, depend on PETERS-DALTON. Just write, wire or phone — we'll be glad to tell you more.

Representatives in principal cities.

- *Hydro-Whirl Paint Spray Booths*
- *Industrial Washing Equipment*
- *Drying and Baking Ovens*
- *Hydro-Whirl Dust Collecting Systems*

10/57

PD Peters-Dalton INC.
A SUBSIDIARY OF DETROIT HARVESTER CO.
17930 Ryan Road • Detroit 12, Michigan

Ask about Amp's Creative Approach
TO BETTER WIRING

for every automotive application

A-MP terminals

Wherever there's a wire in a car there's an A-MP Terminal to connect it.

- Top electrical and mechanical performance.
- Accepted by leading auto and truck manufacturers.
- Patented pressure-crimp eliminates all soldering and welding.
- A-MP Automachines crimp up to 4000 perfect, uniform terminations per hour with unskilled labor.
- A-MP Sales Engineers' electrical terminal knowledge in the auto industry will be valuable in solving your most difficult wiring problems.

AMP INCORPORATED
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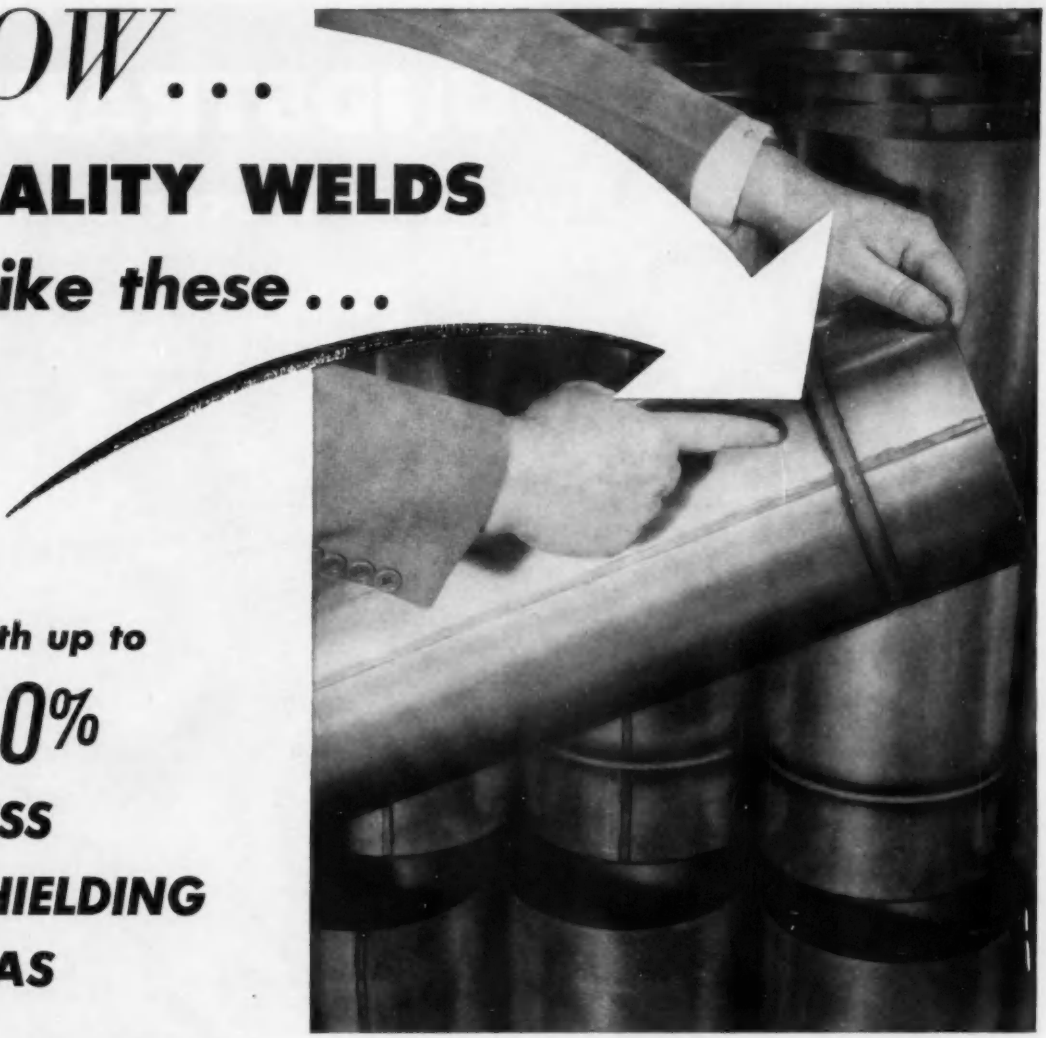
QUALITY WELDS

like these...



with up to

60%

LESS SHIELDING GAS

H-15 argon-hydrogen mixture means new economy in fast, sound welding operations.

Using H-15, a LINDE mixture of argon and hydrogen shielding gases, savings as high as 60% of normal gas consumptions are being attained by manufacturers on a wide variety of metal products. This mixture is designed for extremely efficient mechanized welding of stainless steel, Monel, Inconel, and cupro-nickel.

COMBINES ADVANTAGES—H-15 mixture combines the high welding speed feature of Helium with the low consumption advantages of argon—result, the lowest cost, high-quality welding yet attained . . . And no extra equipment is needed for a change over to H-15.

Get the complete story of this highly efficient, economical mixture, contact your local LINDE representative. Start saving now—do it today.

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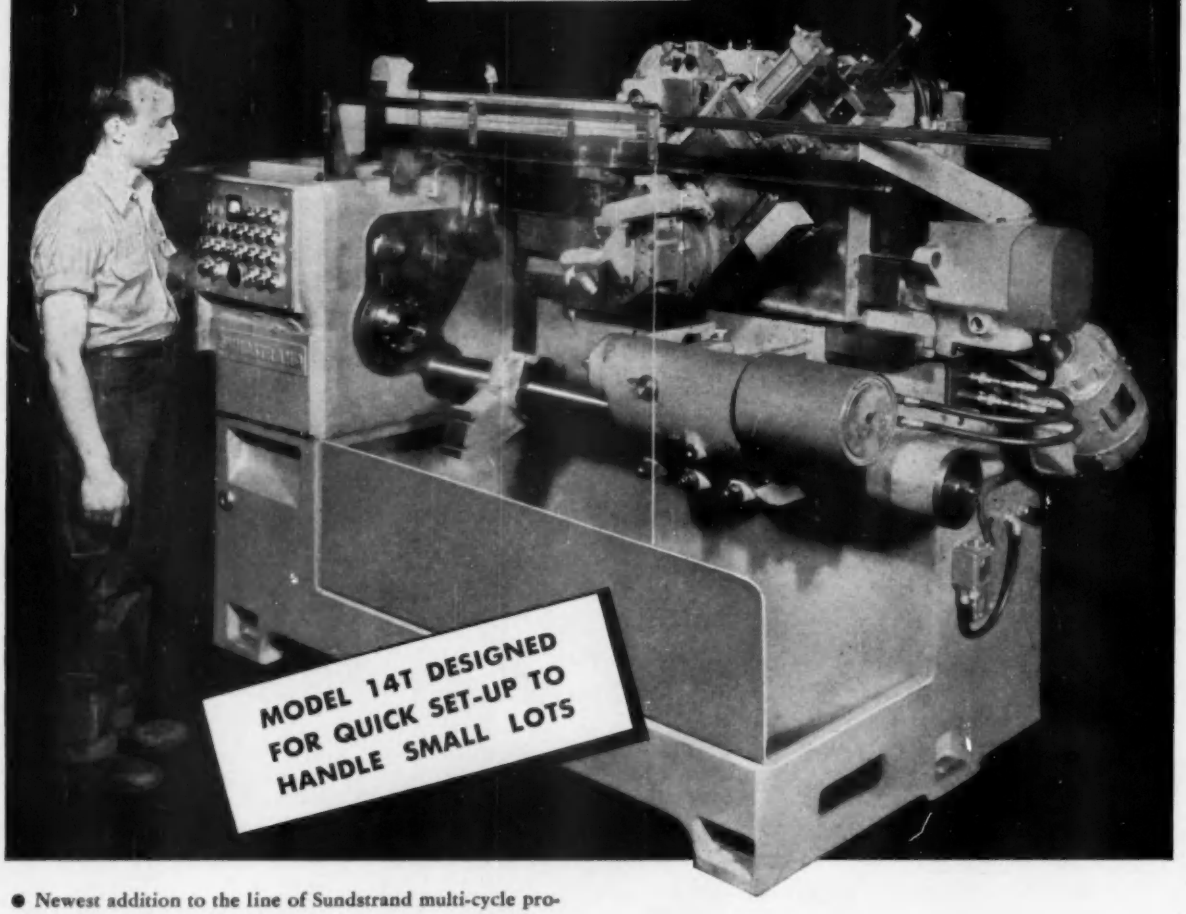
NEW! SUNDSTRAND

Multi-cycle *Hydraulic* Tracer Lathe!



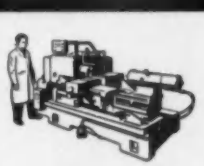
● Newest addition to the line of Sundstrand multi-cycle production lathes is the Model 14T with tracer control. Now, these 40-horsepower production lathes are available with three types of controls: hydraulic tracer, mechanical, and punch card — giving you the one best machine for your turning jobs. Hydraulic tracer control on the Model 14T makes machining of irregular shapes both fast and profitable. Only one template, readily accessible on the front of the machine, is required for multi-cycle cuts. For example, ruffing, semi-finish, and finish cuts all may be part of one automatic cycle. Shoulder facing tools can be provided where required, for squaring and similar operations.

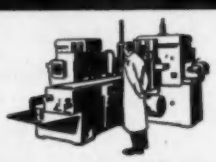
AVAILABLE WITH 2, 4, OR 8-SPEED HEADS

Maintaining correct speeds and maximum horsepower on the Sundstrand multi-cycle lathes is assured by transmission-type heads that provide automatic speed changes. These heads are available in 2-speed, 4-speed, or 8-speed types, enabling a machine to be selected with spindle speeds ranging from 245 to 3025 rpm as best suited to production requirements of your plant.

SUNDSTRAND "Engineered Production" Service* *REG. U.S. PAT. OFF.

AUTOMATIC LATHES | SIMPLEX RIGIDMILS | DUPLEX RIGIDMILS



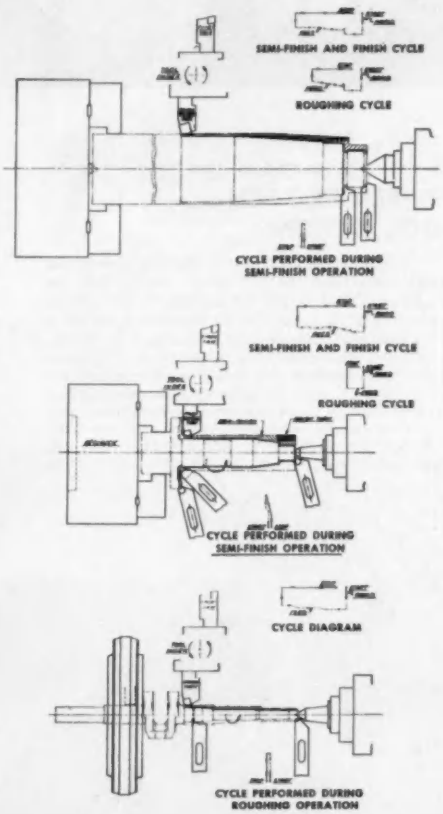


TURRET FOR RUFF AND FINISH TOOLS

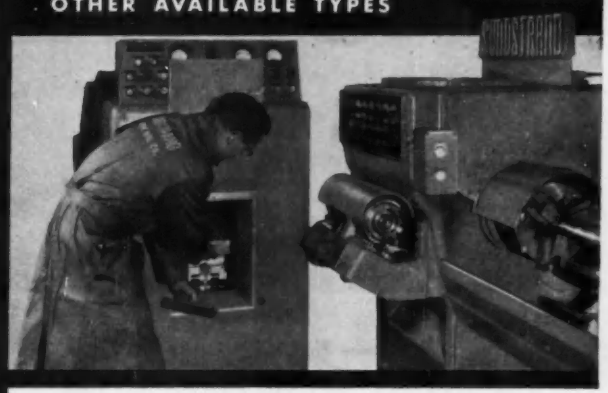
Indexing turret for turning tools provides ruff and semi-finish cuts with a ruffing tool and a finish cut with a finishing tool all in one automatic cycle.

TYPICAL TOOLING SETUPS

Jobs shown here are typical of those handled on Sundstrand Model 14 multi-cycle lathes.

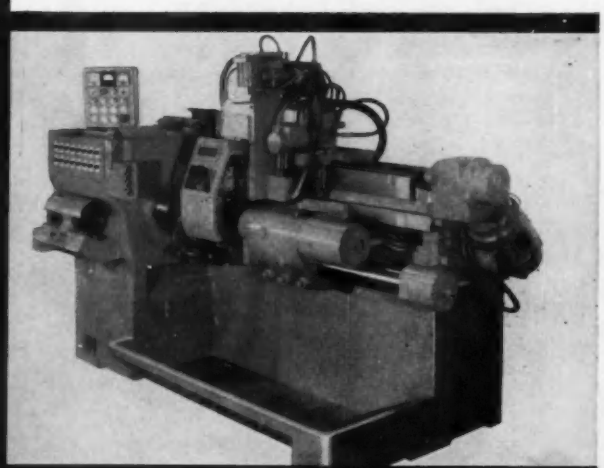


OTHER AVAILABLE TYPES



PUNCH CARD CONTROL . . .

With this system, decimal dimensions on engineering drawings are punched in standard business machine cards with a standard key punch. The cards are then fed into a reader, as shown above, which feeds the electrical signals into a machine control unit. This unit then controls all functions of the machine.



ADDITIONAL FEATURES

Here are a few additional features of Sundstrand multi-cycle lathes:

INFINITELY VARIABLE FEEDS from 7½ to 29½ inches per minute.

LARGE CHIP CAPACITY in large open cavity below facing tool carrier. Vertical ways are free from falling chips.

EASY FRONT LOADING with center line of spindle only 9 inches from front of machine.

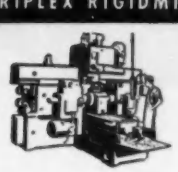
LENGTH BETWEEN CENTERS of 30, 40, 50 or 60 inches.

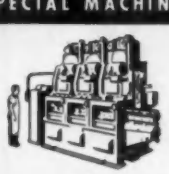
More information about Sundstrand multi-cycle lathes is available in Bulletin 277. Write for it today.

MECHANICAL CONTROL . . .

On the Model 14 mechanically operated machine the turning slide and shoulder facing tools are actuated independently. No template is required for step turning, and micrometer adjustment for steps is easy to set for size corrections due to material changes, etc. There is no lost motion for re-set because index takes place during cut.

TRIPLEX RIGIDMILS | SPECIAL MACHINES





SUNDSTRAND
Machine Tool Co.
2571 Eleventh St. • Rockford, Ill., U.S.A.

"Engineered Production" Service

FOR BROACHING

It takes all 3

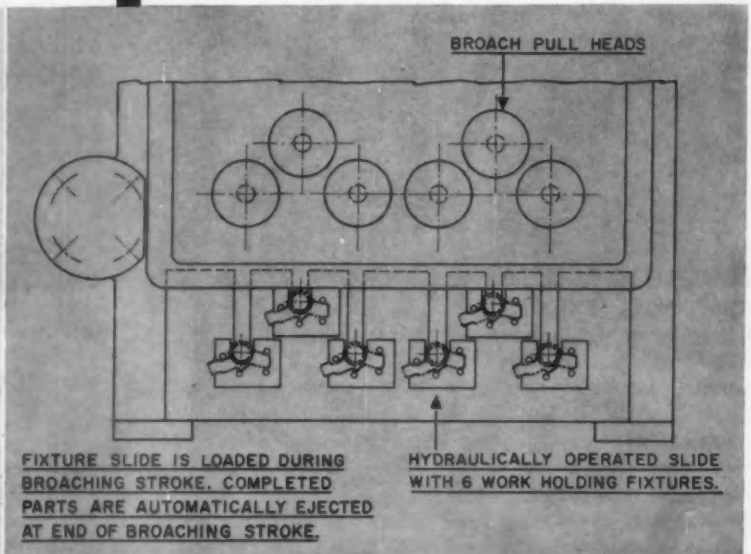
American's *"Engineered Production"* Service . . . gives the broach-user the complete three-part service that is vital for handling a production broaching job. Years of design and production engineering experience, unavailable at any price, are effectively added to your staff at no extra cost.

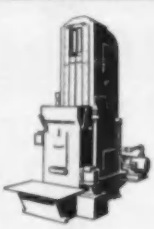
THE JOB Broaching I. D. of hole in exhaust valve rocker. High production required.

THE RESULT 1200 parts per hour, broached *six at a time,* on vertical internal pull-up machine equipped with sliding fixture.

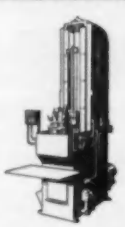
1 PROPER BROACH TOOL DESIGN

Top-quality results on any broaching operation require starting the job with design of the broaching tool itself. In solving this all-important first step, American Broach considers, stock removal, length and width of cut, finish, tolerances required, etc. American's experience in designing and building broaches for every type of part capable of being broached pays off in quality of the work and in long tool life. You can be sure the broach and machine will operate as a team because they are designed that way.

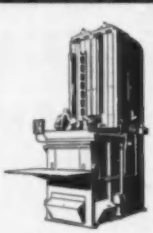

BROACH PULL HEADS
FIXTURE SLIDE IS LOADED DURING BROACHING STROKE. COMPLETED PARTS ARE AUTOMATICALLY EJECTED AT END OF BROACHING STROKE.
HYDRAULICALLY OPERATED SLIDE WITH 6 WORK HOLDING FIXTURES.



Three Way

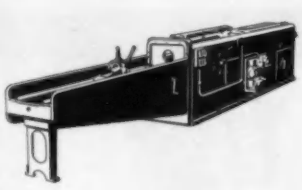


Single Ram



Duplex Ram

Presses



Horizontal

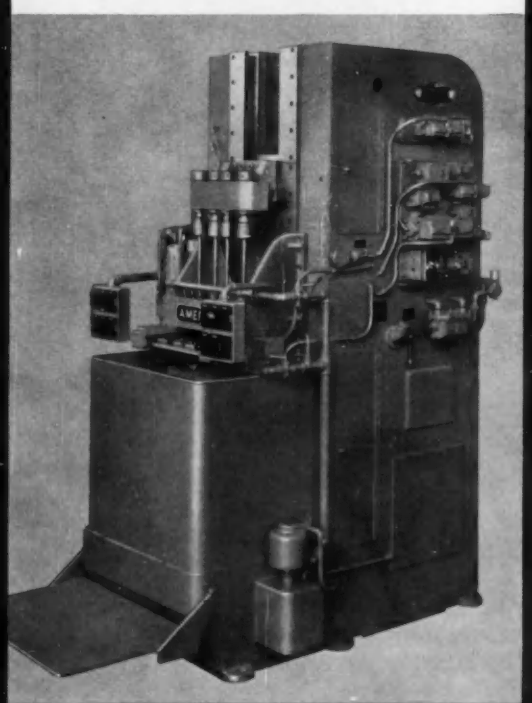
to give you peak broaching performance

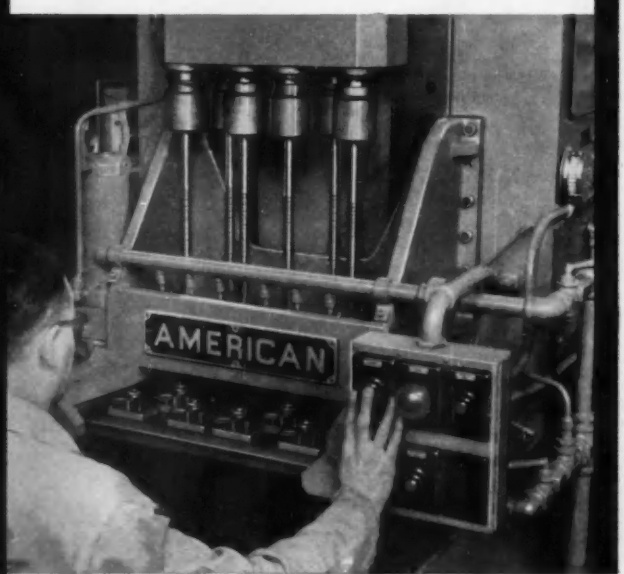
2 SPECIFYING THE RIGHT MACHINE

Production rate required, length and speed of stroke, relationship to other production machinery, and available floor space dictate the selection of the broaching machine capable of doing the best job. At American, machine selection follows design of the broaching tool. Because American builds a complete line of standard machines and has extensive experience with specials, you can depend on getting the most practical machine for your job.

3 EFFICIENT FIXTURING

Whatever your part geometry or hourly needs, fixturing by American Broach forms the vital third link in the production chain. Whether manual loading and unloading is used or the work cycle is completely automatic, workholding fixtures designed and built by American Broach feature easy loading and unloading coupled with positive clamping during the broaching cycle. Even with relatively inexperienced operators, production schedules are maintained since the "skills" are built into the tool, machine, and fixtures.





WRITE for Bulletin A212 for more information on practical broaching methods by American.

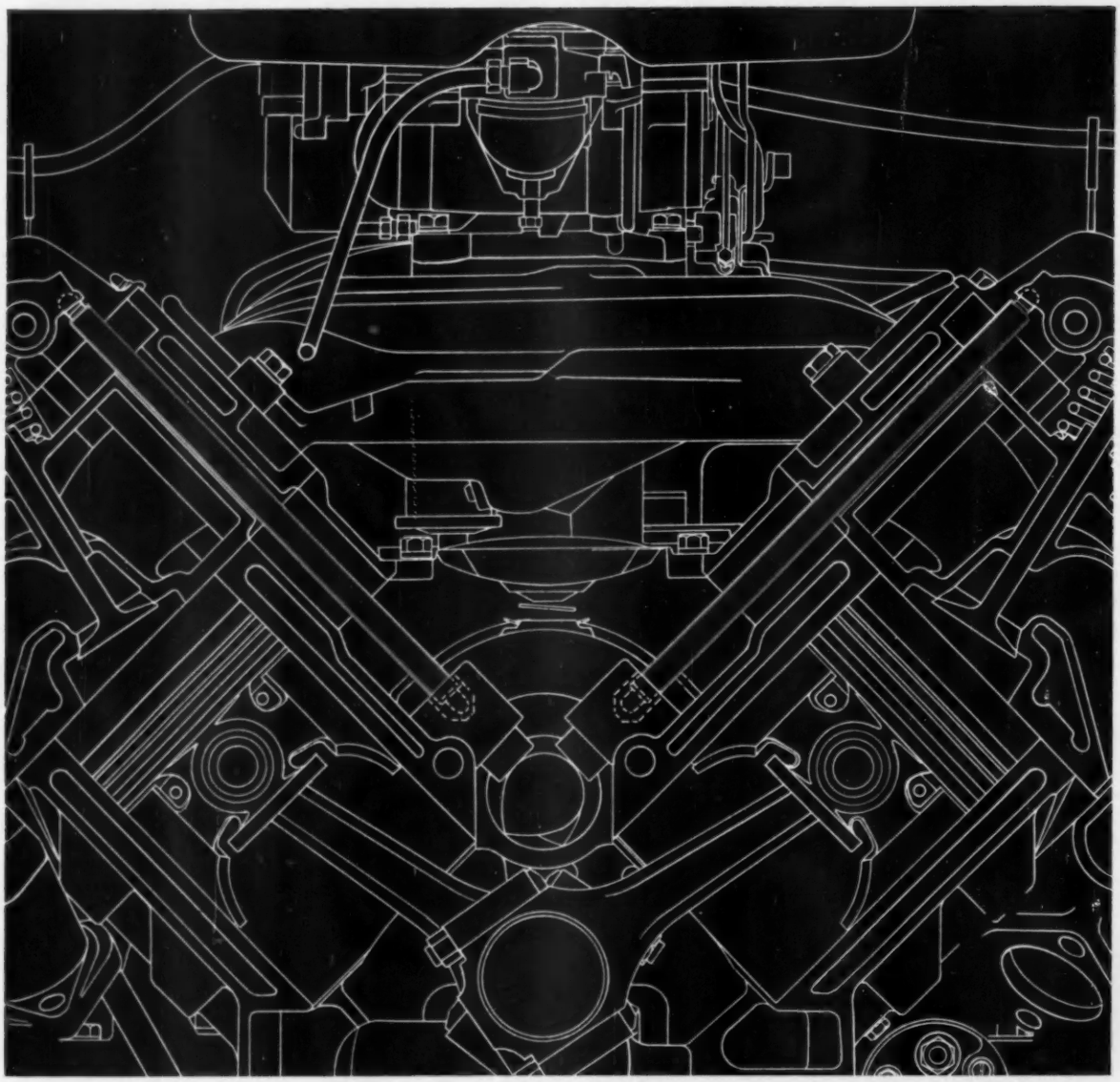
SUNDSTRAND AMERICAN *American* BROACH & MACHINE CO.

A division of SUNDSTRAND MACHINE TOOL CO.

ANN ARBOR, MICHIGAN

See *American* First —for the Best in Broaching Tools, Broaching Machines, Special Machinery

Lightweight Bundy Tubing push rods



Long proved in heavy-duty truck engines, Bundy Tubing improves the performance of powerful V-8 engines by reducing cam load, increasing the efficiency of the entire valve train.

BUNDYWELD IS DOUBLE-WALLED FROM A SINGLE STRIP

Bundyweld starts as a single strip of copper-coated steel. Then it's . . .

continuously rolled twice around laterally into a tube of uniform thickness, and

passed through a furnace. Copper coating fuses with steel. Result . . .

Bundyweld, double-walled and brazed through 360° of wall contact.

←

NOTE the exclusive Bundy-developed beveled edges, which afford a smoother joint, absence of bead, and less chance for any leakage.

help new V-8's deliver full power!

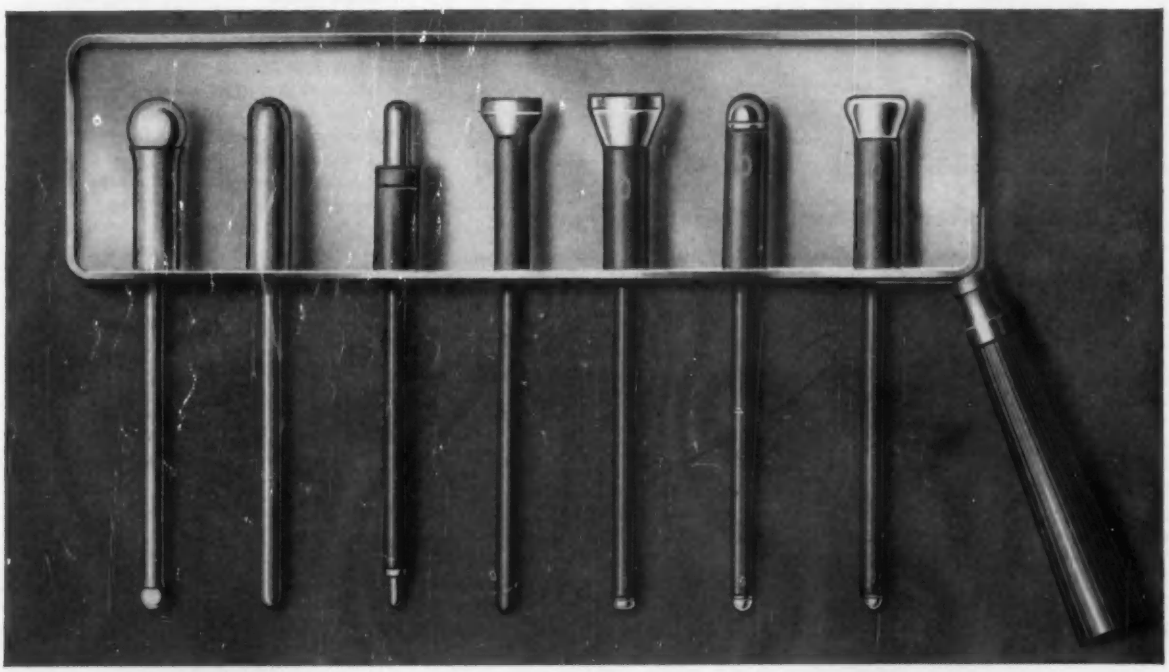
Exciting acceleration and flashing performance are trademarks of today's automotive engines. Since heavy, solid push rods reduce valve efficiency and rob new V-8's of power, many auto makers now insist on push rods of Bundy® Tubing.

Easily fabricated into strong, lightweight push rods, Bundy Tubing reduces cam load, increases the efficiency of the entire valve train. Engines "breathe" deeply, deliver full, designed-in power.

Cold-drawn to proper hardness and held to specified low-camber tolerances, Bundy Tubing is extremely fatigue-resistant, has high ultimate tensile strength. Unmatched dependability has made Bundy Tubing the standard for mechanical- or fluid-transmission applications in cars, trucks, and farm equipment. *In fact, Bundy Tubing is used on 95% of today's cars, in an average of 20 applications each.*

And at Bundy, you get even more than high-quality, low-cost tubing delivered on schedule. We offer free, expert engineering and design service, and fabrication facilities to mass-produce any tubing design to your exact specifications. For full information, call, write, or wire us today.

BUNDY TUBING COMPANY, DETROIT 14, MICHIGAN



Because Bundy Tubing fabricates more easily than the material it replaces, you get more uniform, better finished parts. Bundy offers free design help and fast fabrication service, too.

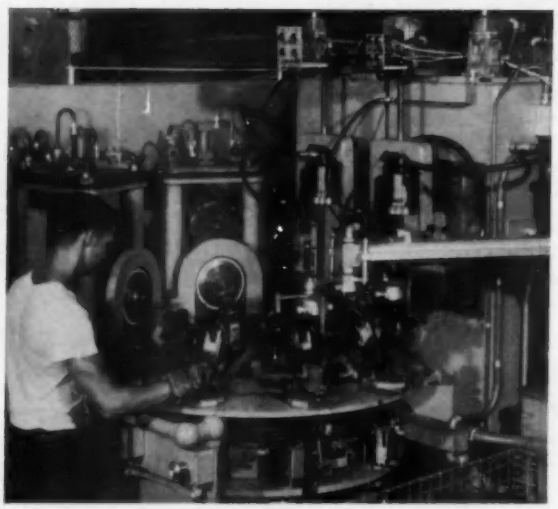
BUNDY® TUBING

Bundy Tubing Distributors and Representatives: *Bala-Cynwyd, Pa.:* Rutan & Co., 1 Bala Ave. • *Cambridge 42, Mass.:* Austin-Hastings Co., Inc., 226 Binney St. • *Chattanooga 2, Tenn.:* Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg. • *Chicago 32, Ill.:* Lapham-Hickey Co., 3333 W. 47th Place • *Elizabeth, New Jersey:* A. B. Murray Co., Inc., Post Office Box 476 *Los Angeles 58, Calif.:* Tubescles, 5400 Alcoa Ave. • *San Francisco 10, Calif.:* Pacific Metals Co., Ltd., 3100 19th St. • *Seattle 4, Wash.:* Eagle Metals Co., 4755 First Ave., South. **Bundywold nickel and Monel tubing are sold by distributors of nickel and nickel alloys in principal cities.**

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING • AFFILIATED PLANTS IN AUSTRALIA, ENGLAND, FRANCE, GERMANY, AND ITALY

NEW PRODUCTION and PLANT EQUIPMENT

FOR ADDITIONAL INFORMATION, please use reply card on PAGE 299



Tinius Olsen "go-no go" Brinell hardness tester automatically accepts or rejects production-line automotive forgings at rates up to 1000 per hour.

Brinell Tester Automatically Handles Forgings

DEVELOPED initially for production line testing of automotive forgings weighing 10 lb apiece, an automatic "go-no go" Brinell hardness tester accepts or rejects parts at rates up to 1000 per hour. Constructed as a revolving "three-station" tester, it automatically grinds a test surface, applies load, measures depth of impression, and accepts or rejects Brinelled parts without manipulation or judgment by the operator. He merely places the parts in the holders before they are rotated to the first station.

In using this tester, the operator places two parts at a time in the holders on the periphery of the large circular work table, movement of which is controlled by a preset timer. The table automatically rotates a quarter turn to the first or grinding station, where a small smooth area is ground by twin grinding wheels. The parts are then moved to the second station, where a standard Brinell load of 3000 kg is applied on the ground surface. At the same time, the depth of the impression in each of the two parts is measured electrically. Readings are transmitted to the "go-no go" memory units at the third station. Parts are then picked up individually and either sent to the next operation via a conveyor belt or dropped into the reject pile, according to their hardness. *Tinius Olsen Testing Machine Co.*

Circle 50 on postcard for more data

Ultrasonic Flowmeter

ACHIEVING flow rate measurements by the modification of an ultrasonic beam, a flowmeter introduced recently offers no obstructions to the fluid flow, pressure drop is eliminated, and accuracy is more consistently attained. It is said to have features especially adapted to the measurement of such difficult fluids as kerosene, liquid oxygen, water and similar low viscosity liquids.

The unit, designated as Glennite Model UF-100, will measure flow rates in the range of 1000 to 4000 gpm with an accuracy of better than one per cent, and provides five-volts full scale output to feed into standard telemetering and recording systems. Special instruments for the measurement of volumetric flow, and complete control systems designed around the flowmeter, can be also be provided. *Gulton Industries, Inc.*

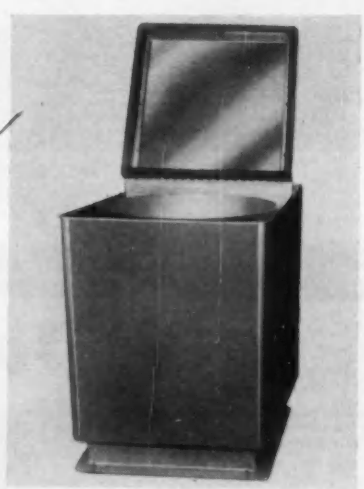
Circle 51 on postcard for more data

Rotary Accelerator

FOR calibrating and testing small assemblies by subjecting them to known values of acceleration, a rotary accelerator has recently been developed which is capable of subjecting objects weighing a maximum of three pounds to accelerations up to 250 g. The 20-in. diam aluminum alloy rotating table has circular graduations spaced ¼-in. apart and contains groups of tapped holes for mounting as many as four test objects and balance weights on the top surface. Objects as large as a five-inch cube can be accommodated on the accelerometer. For precise speed measurement, an auxiliary magnetic pickup is provided for use with external frequency measuring equipment. Operator controls are centralized on one panel. A Plexiglass window at the top permits viewing of object under test.

Acceleration range is 0 to 250 g at a nominal nine-inch radius. Speed range is 0 to 1000 rpm; with speed control by means of a 10-turn helical potentiometer with separate vernier potentiometer for minute speed adjustments. Dimensions of the unit are 2 ft wide by 2 ft 10 in. deep by 2 ft 8¾ in. high. *Schaevitz Machine Works.*

Circle 52 on postcard for more data



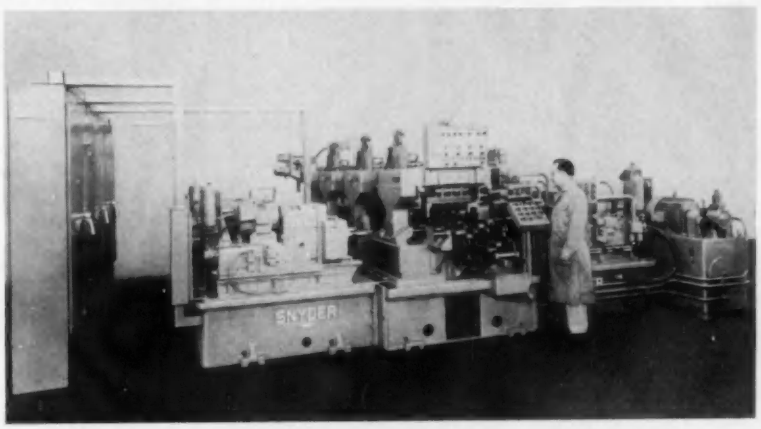
Schaevitz C-1-A rotary accelerator

Segmented Transfer Machine Processes Crankshafts

MAINTAINING concentricity of tapped holes with a bored center hole in forged or cast crankshafts, a 13-station, 4-segment transfer machine performs drilling, boring, chamfering, reaming and tapping operations previously done on trunnion-type special machines. Use of a transfer machine for performing these operations is said to provide maximum accuracy of concentricity of tapped holes and bores. Parts are produced at the rate of 112 per hour.

The transfer mechanism in the new machine is a walking beam type. The fixture is designed to bring the parts in accurate radial location for the machining operations. Holes are reamed before tapping to provide thread depth accuracy, as well as to assure concentricity of the holes with the center bore. Carbide tools are used for the boring, chamfering, facing, counterboring and countersinking operations. Coolant is provided for all machining operations. An oil mist spray acts as coolant for the tapping operation.

In operation, the crankshafts are fed into the loading station by a transfer mechanism from the previous machining sequence on the parts. The center holes in each end of the crankshaft are drilled halfway to depth in the second station and to full depth in the third station. The precision center hole in one end is rough-bored and faced in the fifth station, while the hole in the other end is faced and chamfered. The precision center hole is finish-bored and chamfered in the sixth station, while the other center hole is counterbored and countersunk. Six ⅜-in. holes are drilled in the flange in the eighth station and chamfered in the ninth station. These holes are reamed in the twelfth station. The six flange holes are tapped in the thirteenth station, while a ⅝-in. hole is tapped in the center hole in the other end of the crankshaft.



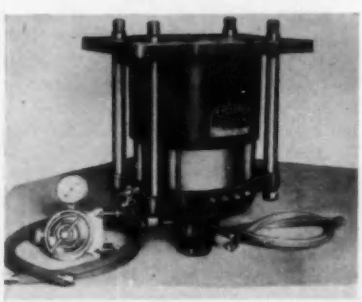
Snyder special 13-station segmented transfer machine processes crankshafts at the rate of 112 per hour.

The hydraulically-operated special transfer machine is made up of three two-way machining units and one one-way unit. Each machining unit has individual control panels and bases to provide a segmented type design. The two-way units for drilling and boring, as well as the one-way unit for multiple drilling and chamfering, are made up of standard self-contained machining units with hardened and ground ways. Spindles in the unit heads are arranged for pre-setting of cutting tools. The two-way units for tapping are made up of standard way-type machining units with hardened and ground ways. The tapping heads are of individual lead screw spindle design.

A master control panel has push-button controls and indicator lights that indicate condition of operation of each segment. JIC standard electrical and hydraulic controls are utilized throughout the design. An automatic lubrication system is provided. The machine occupies a floor space about 17-ft by 12½-ft. *Snyder Tool & Engineering Co.*

Circle 53 on postcard for more data

Pneumatic Die Cushion



The Model DX improved universal pneumatic die cushion for punch presses is made in eight sizes, developing ring holding pressure of 1 to 20 tons on standard shop air line. It is said to come ready for installation on any press, with all necessary high-pressure hose fittings, including combination reducing regulating valve and pressure gage. (Dayton Rogers Mfg. Co.)

Circle 54 on postcard for more data

Six-Station Drilling and Boring Machine

This six-station horizontal indexing drilling and boring machine is used to bore, face, hollow mill, drill and tap three different cast iron gear housings. Five cam feed drilling units, and two lead screw tapping units are employed to process the parts. Horizontal units are provided with side adjustment to handle left-hand parts. Production is 256 parts per hour at 100 per cent efficiency. (The Hartford Special Machinery Co.)

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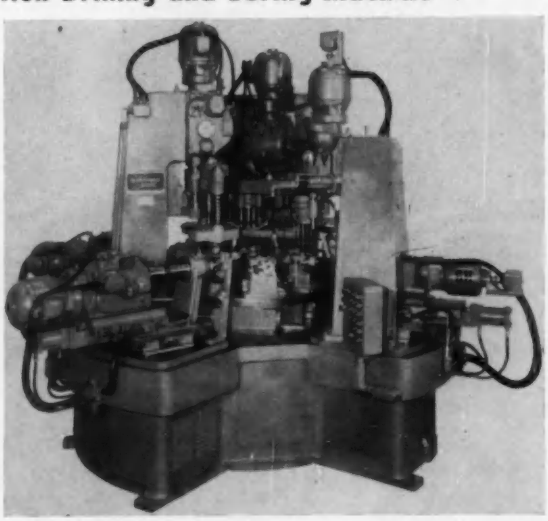

and either sent to the next operation

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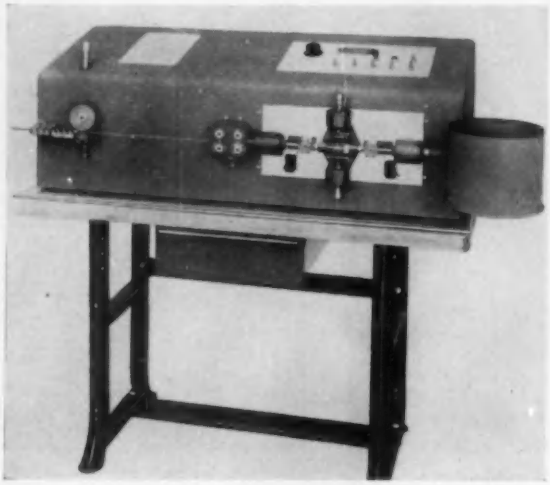
NEW PRODUCTION and PLANT EQUIPMENT



Eubanks Model 810 automatic wire cutting and stripping machine is designed for high-speed operation, e.g. 6000 six-inch pieces per hour, and fast set-up changes. It cuts 32 to 12 gage wire automatically to lengths of from 1-in. to 300-in. and strips 1/8 to 1-in. of insulation from one or both ends.

Automatic Wire Cutting and Stripping Unit

DESIGNED to cut single conductor, solid or stranded wire of from 32 to 12 gage in lengths of from 1 in. to 300 in., and to remove the insulation from one or both ends, an automatic wire cutting and stripping machine is versatile in application. Wire travels through the machine at speeds up to 150 fpm, with split-second stops for cutting and stripping. Production rates at top speed range from about 350 300-in. pieces per hour to more than 8000 one-inch pieces per hour. Strip lengths may be varied from 1/8 to 1 in. At the same time, the machine is said to be economically usable for short runs of from four or five to 100 wires, because of the speed with which setup changes can be made. Changes in wire length can be made in less than one minute by means of a micrometer adjustment; and wire sizes and strip lengths can be changed in less than five minutes.

Designated Model 810, the machine, controlled from a central panel, uses both electric and pneumatic power. The feed rolls are motor-driven and pneumatically controlled. Pneumatic power is also used to operate the cutting and stripping mechanism and to eject the finished wires.

The machine is semi-portable, can cut and strip tough insulation such as Teflon and Fiberglas, and can be synchronized with accessory equipment such as a marking device or an induction heating unit for re-flowing tin on stranded wires before cutting and stripping. *Eubanks Engineering Co.*

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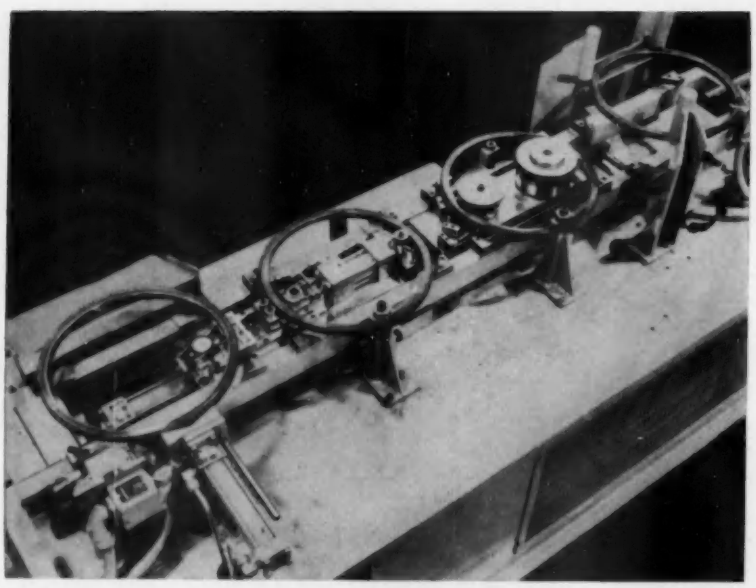

Machine Automatically Straightens Ring Gears

Fully automatic ring-gear straightening is accomplished at the rate of 400 per hour on this machine. The parts are 14-in. diam flywheel gears. The machine rounds up the rings from 0.060-in. out-of-round to under 0.007-in. TIR. It can process ring diameters ranging from 12 to 16 in. In operation, parts are fed from the loading magazine to a walking beam conveyor (upper right of picture) which carries them through the straightening station, gaging station, and exit station. Gears which fail to meet gaging acceptance after straightening are automatically rejected to the side of the machine. (Cargill Detroit Corp.)

Circle 57 on postcard for more data

Specialty Tool Steel

STENTOR, an oil-harding non-deforming tool steel, can now be hardened safely over a broader range of temperature according to a recent announcement. The new hardening range of 1425 to 1525 F is said to have been made possible without change of features such as freedom from decarburization, minimum size change, and uniform hardenability. It permits more latitude in fitting tools and dies made of Stentor into heat treating schedules involving other grades of materials.

For minimum size change of less than 0.0004-in. per in., hardening from 1425 F is still recommended; however, the broadened range expands the safe hardening limits. Stentor will increase in size about 0.001-in. per in. when hardened, but when drawn between 300 and 400 F, it is said to return to within 0.0004-in. per in. of its original size. Because of this minimum size change and freedom from decarburization in heat treatment, tools may be used without grinding after hardening.

Applications for the material include dies, broaches, collets, stamps, spindles, master taps and thread gages. *The Carpenter Steel Co.*

Circle 58 on postcard for more data

(*Turn to page* 380, *please*)

Free INFORMATION SERVICE

Use either of these postcards for Free Literature listed below, or for more information on New Production Equipment and New Products described in this issue.

USE THIS POSTCARD

FREE LITERATURE

Spring Steels 1

"Fact Book of Cold-Rolled Spring Steels," is a 48-page brochure offering a brief course of instruction on the subject of spring steels and their selection. *Wallace Barnes Steel Div., Associated Spring Corp.*

Tungsten Carbide 2

The characteristics of a tungsten carbide composition with platinum binder for product applications, such as valves and seats, requiring high wear and corrosion resistance, are contained in a two-page bulletin issued by *Kennametal Inc.*

Magnesium, Titanium 3

Design data on magnesium and titanium, including their physical and mechanical properties, forming characteristics, and corrosion behavior, are covered in a 44-page booklet issued by *Brooks & Perkins, Inc.*

Welding Electrodes 4

Form 106, six pages, presents technical data on the characteristics and performance of iron-powder electrodes. *Hoeganaes Sponge Iron Corp.*

Drill Press 5

A four-page bulletin describing a new 15-in. drill press and listing specifications for 40 different models, has been issued by *Delta Power Tool Div., Rockwell Mfg. Co.*

Hack Saw Blades 6

Eight-page catalog listing a line of hand and power hack saw blades, includes suggestions for setting up power machines, and determining speeds and feeds. *Heller Tool Co.*

Handling Attachment 7

A push-pull loader with integral sideshift, used for palletless handling and attachable to any Yale lift truck, is described in a bulletin published by *Yale & Towne Mfg. Co.*

Mandrels 8

Expanding jaw mandrels, which includes one of step-jaw design and another of straight-jaw design, are described in a four-page bulletin issued by *Erickson Tool Co.*

Limit Switches 9

Bulletin 956, eight pages, presents information on 21 contact arrangements, ratings, and electrical characteristics of nine models of machine tool limit switches. *R. B. Denison Mfg. Co.*

Presses 10

Bulletin 1-A, four pages, gives data on 4- and 7-ton inclinable bench presses, on 4- and 10-ton adjustable bed and horn presses, and on a 10-ton floor-mounted inclinable press. *E. W. Bliss Co.*

(Please turn page)

VOID After May 15, 1957 3/15/57

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(Turn to page 380, please)

FREE LITERATURE—Continued

Arc Cutting

Form ADE 880, 24 pages, presents a new method for straight line and shape cutting of metals, including aluminum, stainless steel, nickel, copper, and aluminum bronze. *Air Reduction Sales Co.*

Press Feeders 12

A 12-page catalog contains extensive data on press room equipment for feeding coil stock. *Special Engineering Service, Inc.*

Tools 13

Detailed information on Carmet tool holders and carbide throw-away inserts is given in a new 12-page catalog. *Allegheny Ludlum Steel Corp.*

Epoxy Resin Impressions 14

Technical Bulletin 22 describes a hand lay-up system for making glass-laminated epoxy-resin impressions for use in metal working, and model and pattern reproduction. *Smooth-On Mfg. Co.*

Switches 15

Pub. EL-178 is a 26-page booklet featuring a complete line of oil-tight pushbutton switches, as well as indicating lights, selector switches, and accessories. *Cutler-Hammer Inc.*

Elevating Trucks 16

Catalog HE-56, eight pages, contains information on a line of fork and platform elevating trucks, drum stackers and straddle models. *American Pulley Co.*

USE THIS POSTCARD

Machine Tools 17

Catalog 5700, 80 pages, lists an entire line of precision machine tools, including engine lathes, toolroom lathes, turret lathes, vertical spindle milling machines, bench shapers, drill presses, and pedestal tool grinders, as well as accessories. *South Bend Lathe Works.*

Seamless Tubing 18

ASL 285 and 286 contain technical data on Croloy 27-4-1 and 25-12 seamless tubing for elevated temperature or corrosive use. *Tubular Products Div., The Babcock and Wilcox Co.*

Electrical Contacts 19

Catalog C-522, four pages, describes materials, properties, forms, and uses of a line of electrical contacts. *Gibson Electric Co.*

Analog Computers 20

An eight-page booklet defines in question-and-answer form certain types of computers, and summarizes the applications of each. *GPS Instrument Co., Inc.*

Data Handling 21

Design features of a data handling system offering high-speed storage on magnetic tape are covered in a two-page technical bulletin issued by *Berkeley Div., Beckman Instruments, Inc.*

Chisels 22

A 16-page catalog that classifies pneumatic and hand chisels according to point style, body size, and shank type, has been published by *Bedford Tool and Forge Co.*

Gear Deburrer 23

A new single-station machine for deburring and chamfering medium to large hypoid pinions is covered in Bulletin BMHP-15 recently issued by *Modern Industrial Engineering Co.*

Sheet Metal Tools 24

Booklet 202, 20 pages, presents detailed information on power-operated machines for light sheet metal work. *Niagara Machine & Tool Works.*

Silicone Rubber 25

A 10-page brochure presents information on new heat-resistant and low-shrinkage compounds, as well as on a custom compounding method for highly-specialized or multi-purpose applications. *Acushnet Process Co.*

(Turn to page 372, please)

300

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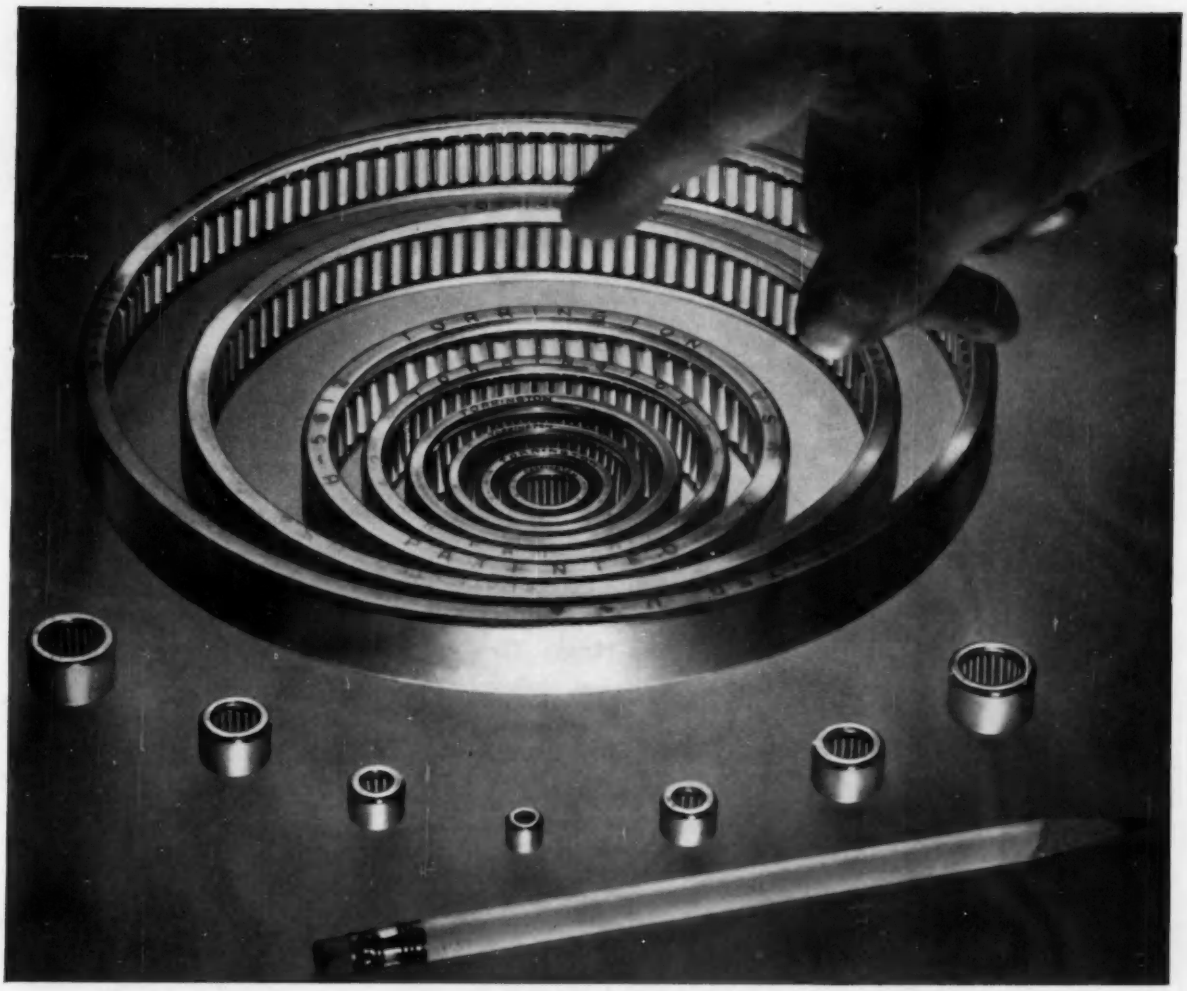

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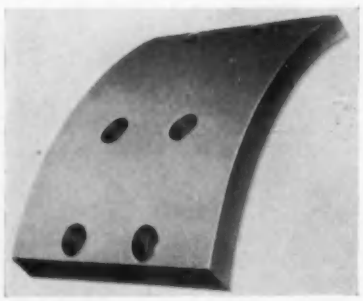
NEW PRODUCTS AUTOMOTIVE-AVIATION

FOR ADDITIONAL INFORMATION, please use reply card on PAGE 299

Brake Blocks

All-metal brake blocks, designed to meet the braking requirements of heavy-duty motor transport and off-the-highway equipment, are in a line just introduced. Made from powdered



ferrous metals and various refractory elements, they are said to show no fade on either high-speed stops or continuous downhill braking, to require fewer adjustments, to increase drum life as much as 600 per cent, and to be unaffected by moisture or grease. *The S. K. Wellman Co.*

Circle 70 on postcard for more data

Teflon Tapes

Cementable glass-supported and unsupported Teflon tapes are in a line introduced recently, permitting the cementing of Teflon, which has a low coefficient of friction and corrosion-resistance, to virtually any type of surface. Said to be available for the first time in glass-reinforced form, CDF cementable, glass-supported Teflon opens the way for applications previously considered impractical with unsupported tape. The glass-supported material is reinforced with finely-woven glass cloth, giving it added abrasive resistance and tensile strength, lower cold flow, dimensional stability, and generally superior mechanical properties.

Both the supported and unsupported Teflon can reportedly be bonded with ordinary adhesives to practically any surface, including metal, plastics, glass, wood, ceramics, and rubber. Produced in widths from ¼ in. to 12 in. and in thicknesses from 0.002 to 0.060 in., the tapes are available with either one or both surfaces treated for adhesion. The cementable surface is produced by treatment with a sodium-ammonia mixture. *Continental-Diamond Fibre Corp.*

Circle 71 on postcard for more data

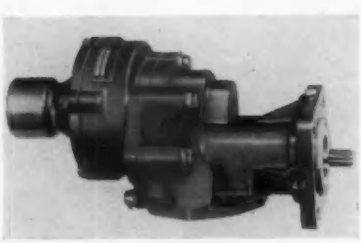
Mobile Home Tire

Introduction of a medium height tubeless tire for mobile homes has been announced. Known as the Dayton Thorobred Mobile Home "Low Boy," the new size tire is 7.00 x 14.5, is said to have high load capacity, and is 3.2 in. less in height than the conventional 7.00 x 15 size. *The Dayton Rubber Co.*

Circle 72 on postcard for more data

Turbine Fuel Pump

Designed for gas turbine systems, a high-pressure fuel pump recently announced is a rotary gear, positive displacement type, with a built-in centrifugal fuel booster pump and mounting pad for gear-driven fuel meter control. It has a rated capacity of 9.4 gpm at 6000 rpm and 700 psig discharge pressure, pumping MIL-F-5624, grade JP-4 fuel at 110 F

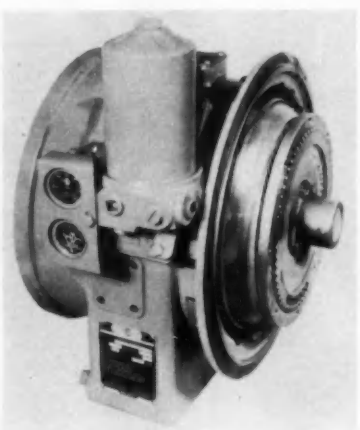


with 20 psia inlet pressure. Power requirement is 8.4 hp max at rated capacity. Displacement of gear pump is 0.52 cu in./revolution. Weight is 4.4 lb. Model designation is RR16060B. *Lear-Romec Div., Lear, Inc.*

Circle 73 on postcard for more data

Torque Converter

Applicable to shovels, front-end loaders, hoisting machinery, road rollers, graders and other installations where single-stage torque converters may have advantageous characteristics, the new 1300 Series single-stage unit is intended for use with engines



producing from 30 hp at 1450 rpm to 212 hp at 3200 rpm. Specific torque ratings are 165, 200, 240, 285 and 330 lb-ft, depending upon the impeller blading selected by the user. Maximum input torque is 350 lb-ft.

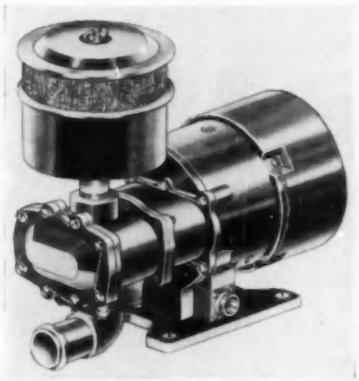
The 1300 Series unit features "unloading" of the engine through an exclusive blade design wherein the turbine develops a counter-head which stops fluid circulation at high speed ratios. Another stated feature is that impellers having different bladings (both number of blades and pitch) are interchangeable. Thus the converter can be matched as accurately as possible to engines of various horsepower outputs and speeds, within the rated limits, without requiring changes in the converter housing or other components.

Production of the 1300 Series currently consists of one model—the Model F—with an SAE No. 2 engine flywheel housing size and an SAE No. 2 or 3 output housing. *Twin Disc Clutch Co.*

Circle 74 on postcard for more data

Dry-Air Pump

Compact and weighing only 5 lb 10 oz, a positive displacement dry air pump incorporates patented features at tips and ends of impellers to provide practically zero clearance. Called the Model 133218, it is rated at 40 cfm zero pressure delivery or 30 cfm (free air) 10 psi delivery at 7500



rpm. Higher pressures can be attained, and pump speed can be increased if more flow is desired.

In one military application it is equipped with an air cleaner and a 400-cycle ac Pesco electric motor rated 2.8 hp at 7500 rpm. *Pesco Products Div., Borg-Warner Corp.*

Circle 75 on postcard for more data

Light-Weight Locknuts

Having a design which yields savings in weight up to 43 per cent compared to conventional locknuts, a new steel locknut for aircraft applications to 550 F is presently available in 10-32 and ¼-28 sizes. In the 10-32 size the fastener weighs three pounds per thousand, and in the ¼-28 size weighs four pounds per thousand. Cadmium

plated to resist corrosion, it is of one-piece all-metal design with full wrenching area. A report issued by the company's laboratories certifies that the re-usability and other performance factors of the nut conform to both AN-N-10 and MIL-N-25027 specifications. *Standard Pressed Steel Co.*

Circle 76 on postcard for more data

Thrust Washers

Thrust washers of Nylatron GS, a molybendum disulphide filled nylon formulation, are now available from stock in a range of sizes. They are applicable where wear resistance is required under light thrust loads, such as in fractional horsepower motors. The material is said to have dimensional stability and low deformation under load, coupled with a low coefficient of friction.

The washers are stamped from strip to OD's of ⅜ to 1 5/16-in. and ID's of ⅛ to 1 in. They are obtainable in thicknesses of 1/64, 1/32 and 1/16-in. *The Polymer Corp. of Penna.*

Circle 77 on postcard for more data

Aluminum Check Valve

Featuring a 55 per cent weight saving over conventional steel check valves, a ½-in. aluminum alloy check valve for 300 psi aircraft service is MS-approved. Rated flow capacity is 6.0 gpm.

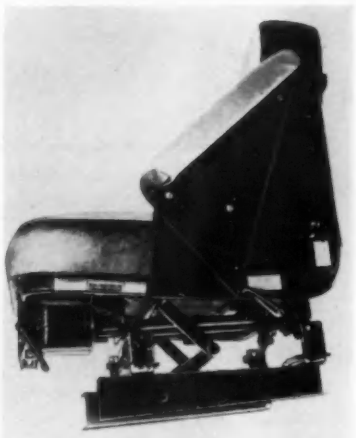
Approved as MS 28890-8, the valve illustrated is one of seven sizes in the

new Series 1800 heavy-duty line of cone type check valves. MS approval on the balance is pending. The valves have a rated flow capacity from 1.2 to 29.0 gpm, and an ambient temperature range from −65 to 160 F. Wider temperature ranges are available on special order. Four sizes of the Series 1800 valves are made from high-strength aluminum alloy—½, ⅝, ¾ and 1-in. OD. Three other sizes—¼, 5/16 and ⅜-in. OD—are made from steel. The valves are also available in stainless steel for special high temperature and corrosive service. *Tactair Valve Div., Aircraft Products Co.*

Circle 78 on postcard for more data

Bucket Seat

Equipped with a rubber torsional spring suspension system for absorbing shock and vibrations, a new bucket seat has been introduced for heavy-duty construction and earth-moving equipment applications. It can be adjusted to the weight and height of the individual operator by turning the knobs of calibrated gages. Weight loads can be varied from 100



to 275 lb. Vertical, fore and aft, seat and back angle, and seat depth adjustments are provided.

This bucket seat is a further development of the company's torsional spring suspension system, which until now has been used only in its truck and tractor seats. *Bostrom Manufacturing Co.*

Circle 79 on postcard for more data

Sealant

Capable of resisting the action of diester lubricants, a sealant recently placed on the market is designed particularly for use where oil or gasoline contacts the seal. Called Super 300, it is a brushable, heavy-bodied liquid which will not wash out upon contact with detergent additives in automotive lubricants and aviation jet fuels. The sealant is also said to withstand high pressures and temperatures up to 450 F.

It is recommended by its maker for use on transmissions and torque converters, especially where synthetic hydraulic fluids are used, and for gear box covers, heads, and valve cover plates on heavy-duty engines. *Permatex Co., Inc.*

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metal, plastics, glass, wood, ceramics,
Circle 73 on postcard for more data
Circle 74 on postcard for more data

The BUSINESS PULSE

Recent Signs of Slackening in Economic Tempo Raise Question as to Whether Inflationary Tendencies Have Been Checked. Business Investment in Plant, Equipment, and Inventories Seen as Most Critical Area in the Months Ahead.

This Survey Is Prepared exclusively for AUTOMOTIVE INDUSTRIES by the Guaranty Trust Company of New York.

Business Activity Declines

The course of business developments since the beginning of 1957 has in some respects been surprising, in view of the tenor of most year-end forecasts. Those forecasts, by and large, stressed the probability of continuing strong business supports through the first half of 1957 at least, with difficulties—if any developed during the year—likely to be deferred until the second half.

What has actually happened is that some signs of a slackened business tempo have emerged in the very early part of the year, suggesting the possibility that the curve of overall activity could turn downward earlier than had been generally anticipated.

The changes underlying this view have admittedly been small for the most part, and it is quite conceivable that they may prove to have been false omens. Nevertheless, the changes have been sufficiently diffused to warrant serious attention.

Bank Loans Down

One impressive change has been the greater-than-seasonal decline in commercial bank loans. The total decrease in January, for example, was more than twice as large as that a year earlier. Heavy construction awards have lagged substantially behind those in the corresponding period of 1956. Freight car loadings have been disappointing. Year-to-year declines in production have appeared in such industries as paperboard and lumber. There has been a rise in the number of business failures, some deterioration of the market for appliances, a declining volume of new orders for machine tools, growing indications of a spotty textile situation, a further decline in the number of new housing starts, and some rise in claims for unemployment benefits by comparison with early 1956. The demand for new-model automobiles has not matched the optimistic expectations of last autumn. Finally, the demand for steel—which a few months ago seemed insatiable—has tapered off, and there have been predictions that some decline in the over-all production curve for steel is to be expected by the second quarter.

Such developments as these have led many people to ask whether the Government, in its continuing effort to rally the nation to an awareness of inflationary dangers, may not be girding itself for the wrong battle. To many observers it seems inappropriate to talk about the possible need for wage and price controls at a time when there are indications that the economic tempo may be moderating.

The development most difficult to reconcile with the Government's apparent belief that inflation remains the country's No. 1 problem is the recent decline of the so-called sensitive price indices.

Wholesale Prices Lower

The Government's overall wholesale price index and the consumer price index, it is true, are both still inching upwards, or were at their latest monthly readings. These, however, are traditionally sluggish measures, slow to reflect changes in primary markets. By contrast, the daily index of wholesale prices compiled by the Bureau of Labor Statistics, which is composed of 22 commodities selected for their sensitivity, has been tending lower, more or less steadily, for about three months, featured by particularly noticeable weakness in prices of raw industrial goods. The consequence of this decline is that this index has now returned approximately to the level which obtained just before the disturbing outbreak of armed conflict in the Suez area. Similarly, the wholesale price index compiled by The Guaranty Trust Company (also sensitive in character) has dropped rather sharply in the past two months, with the mid-February reading almost 4 per cent below that for mid-December.

Although these various signs of slackening suggest the possibility of an earlier decline in the curve of overall business that had previously been anticipated,

(*Turn to page* 370, *please*)

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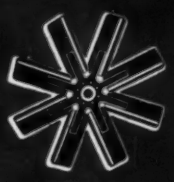

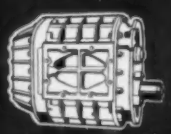

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AIR BRIEFS

By RALPH H. McCLARREN

Supersonic Bomber—the B-58

The first B-58 has been undergoing tests at Fort Worth, Texas, plant of Convair Division of General Dynamics Corp., where it is in initial production.

Called the "Hustler" the B-58 is 95 ft long and has a wing span of only 55 ft. Four J-79 General Electric turbojet engines power the craft for its speedy stratospheric flight. It is estimated that at maximum speed the engines produce the equivalent total of about 200,000 hp. It flies faster than the speed of sound; the exact performance has not been revealed by U. S. Air Force. Possibly this is a bomber so fast it would not require fighter support. The fighter plane might have a difficult time catching up to it.

Short-Haul Airlines Make Record

There are 13 local airlines in the U. S. which serve cities off the main trunk lines. Last year they carried 3,516,242 passengers, an increase of 132 per cent over 1955. During 1956 they added 25 planes making a total of 194 planes in scheduled service. Reaching a total of 644,994,000 passenger miles in 1956, the average passenger journey figured to be 183 miles.

These carriers specialize in short haul air transportation of passengers, mail and express within their respective geographical regions as assigned by certificates of public convenience and necessity issued by the Civil Aeronautics Board. By name the airlines are, Allegheny Airlines, Bonanza Air Lines, Central Airlines, Frontier Airlines, Lake Central Airlines, Mohawk Airlines, North Central Airlines, Ozark Airlines, Piedmont Airlines, Southern Airways, Southeast Airways, Trans-Texas Airways and West Coast Airlines.

Business Flying Increasing

All civilian flying excluding the nation's airlines, referred to as "general aviation," made spectacular gains last year. Growth in number of planes is reflected by a 52 per cent increase in utility aircraft shipments in 1956 over 1955. A total of 6738 aircraft valued at $103,791,000 was shipped during this last calendar year.

This raises the fleet of general aviation aircraft to approximately 60,000. A fleet about 35 times larger than the number of airplanes operated by all U. S. Airlines combined.

Business flying now amounts to about 5 million flying hours per year, more than the total hours flown by the nation's scheduled airlines. The business aircraft, totaling about 20,000 planes, are used mostly by forward-looking companies to speed key executives between home offices and far-flung industrial plants.

Aircraft Employment Tops Other Manufacturing Industries

According to the Bureau of Labor Statistics the aircraft industry at the end of November 1956 employed 855,600 persons. Since May of last year aircraft manufacturing, including airframes, aircraft engines, aircraft systems and components has had more employees at work than any other manufacturing industry.

As of November there were 567,100 production workers in the aircraft industry. Hourly earnings averaged $2.31 and weekly earnings, including overtime premiums, averaged $97.94.

Nuclear Reactor on Display

Visitors to the International Atomic Exposition in Convention Hall, Philadelphia, March 11-17, will see nuclear reactor in operation. It is the first public U. S. showing of an operating nuclear reactor. The only previous occasion was at the Geneva Conference in Switzerland last year.

Arrangements for the display have been made by Aerojet-General Corp., a subsidiary of the General Tire and Rubber Co., manufacturers of the equipment. Periodic demonstrations are planned on a low power output basis of about 100 milliwatts.

New Name for Aviation Product Company

Electronic Communications, Inc., of Teterboro, N. J., is the new corporate name for the reorganized Air Associates, Inc., one of the nation's oldest firms engaged in the manufacture and distribution of aviation supplies and accessories. According to Frank W. Godsey, Jr., the new name is indicative of their

(*Turn to page* 346, *please*)

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4 Holes, 90° Apart Bored Simultaneously

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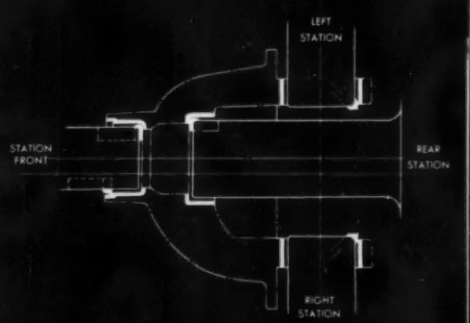

SIMULTANEOUS MACHINING of four holes assures a 90° relationship between bearing bores and pinion bores.

This differential carrier assembly requires the boring of accurate holes at right angles to one another. Bore diameters are held as close as .0005". Shoulders must be square with bores. Bearing bores must be square with pinion bores.

Here was an opportunity to combine operations by using an Ex-Cell-O 4-Way Precision Boring Machine, with these profitable results:

FASTER PRODUCTION—machine works simultaneously from four directions.

PRECISION—accurate bores, holding the 90° relationship, are produced by precision spindles, smooth, hydraulically operated slides, and accurate location of the way units.

RELOCATION ERRORS ELIMINATED—since the part is located and clamped only once, there can be no errors caused by relocating and reclamping.

Is there an opportunity to cut costs and combine operations in your product? These way-type precision boring machines, special machines composed of standard units, also are used in automated production lines. They can be placed side by side and connected with transfer type fixtures to form transfer machines, or they can be combined in a transfer machine at those stations where precision boring and similar operations are required.

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CO_2 Shielded Arc Welding in Automatic Machines

By
Joseph Geschelin

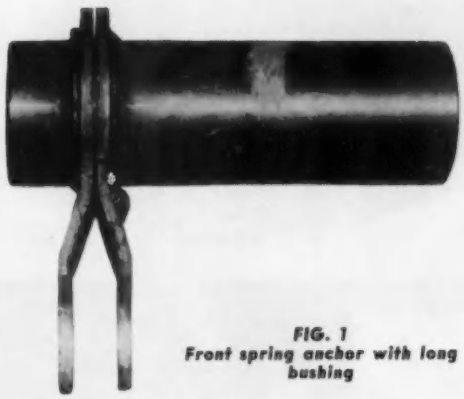


FIG. 1
Front spring anchor with long bushing

FIG. 2—Front spring anchor with short bushing

FIG. 3—Front motor support

WELDING engineers have been quick to recognize the advantages of the new technique of CO_2 shielded arc welding which at the moment appears to be particularly effective and economical for mild steel fabrication. Chrysler Corporation's Highland Park plant in Detroit has five welding machines of this kind in operation, fully automatic in cycle except for loading and unloading.

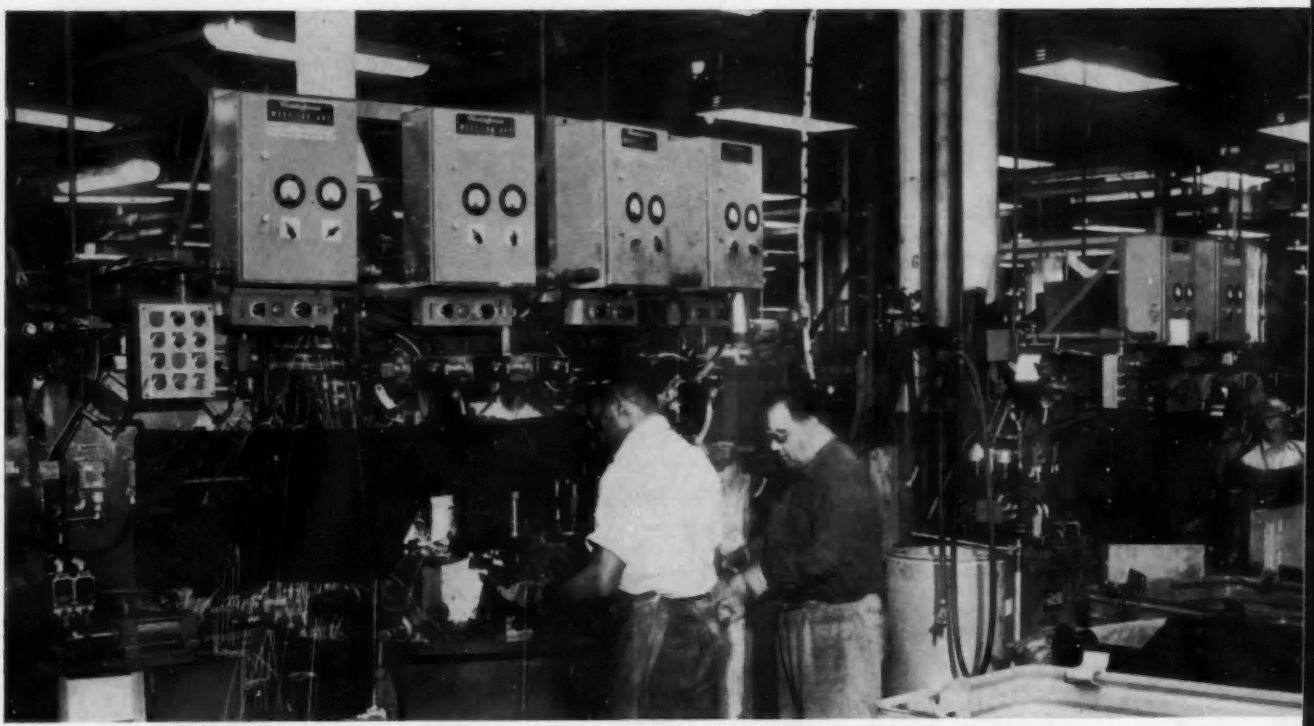
Three larger machines, fitted with eight-station horizontal rotary indexing tables are employed for fabricating the two types of front spring anchors (Figs. 1 and 2). The two smaller machines handle the welding of the two-piece front engine support (Fig. 3). The five machines were supplied by Expert and embody Westinghouse control equipment and 600-amp rectifier welding units for the larger machines.

The CO_2 gas for these machines is supplied from a large, insulated, storage tank which holds 12,000 lb of liquid CO_2 under pressure. At the present time Chrysler consumes the gas at a rate of some 9000 lb per month.

Wherever it is applicable this form of shielded arc has proved to be more economical than with the use of the costly argon gas atmosphere. The resulting welds are clean and strong and entirely satisfactory for the present applications.

Each of the machines for producing the several types of anchors has eight, two-stage clamping fixtures. The first fixture stage (Fig. 4) holds the parts in vertical position for tack-welding with two heads as shown. As the tack-welded assemblies return to the loading station the operator removes the part and loads it onto the horizontal second-stage fixture. In this position the part reaches the final welding station (Fig 5) where the air-powered quill is rotated 360 deg while the two heads complete the fillet weld. After the welding operation has been completed the assembly is automatically stripped from the quill by means of a cam-activated ejector plate.

Despite this double-index procedure each machine is capable of producing about 200 pieces an hour



Exterior view of one of the large Expert CO_2 machines for welding front spring anchors

when it is operating at 80 per cent efficiency.

The two smaller welding machines have an entirely different configuration for fabricating the engine support. Here the machine has a vertical rotary indexing table with simple clamping fixtures arranged to hold the two sections. As the fixture reaches the welding station, the two welding heads are arranged to reciprocate horizontally to produce the straight-line weld on each side. This operation is performed at the rate of 225 pieces an hour at 80 per cent efficiency.

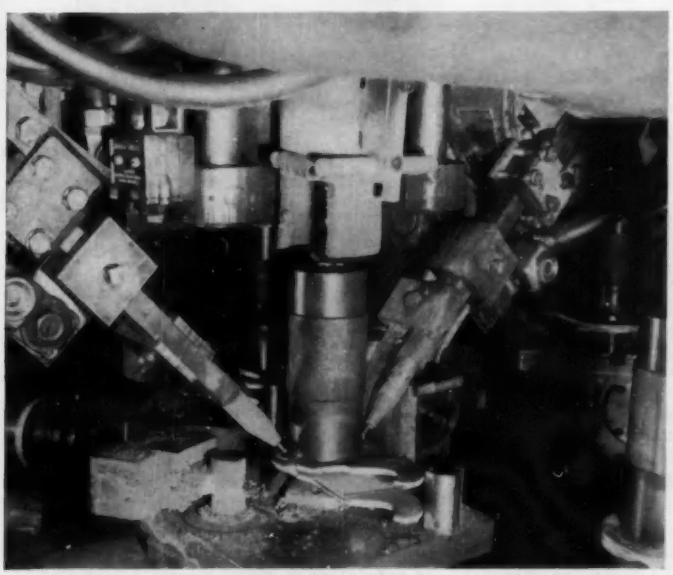


FIG. 4—First-index, tack welding of anchors in vertical position, using two heads

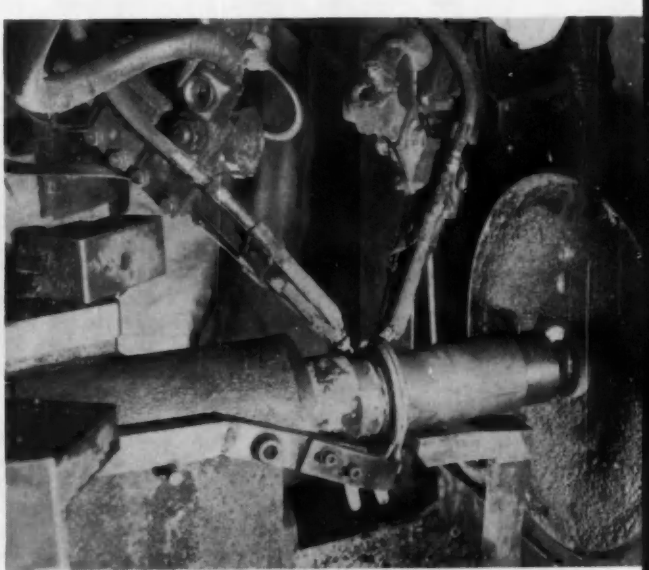
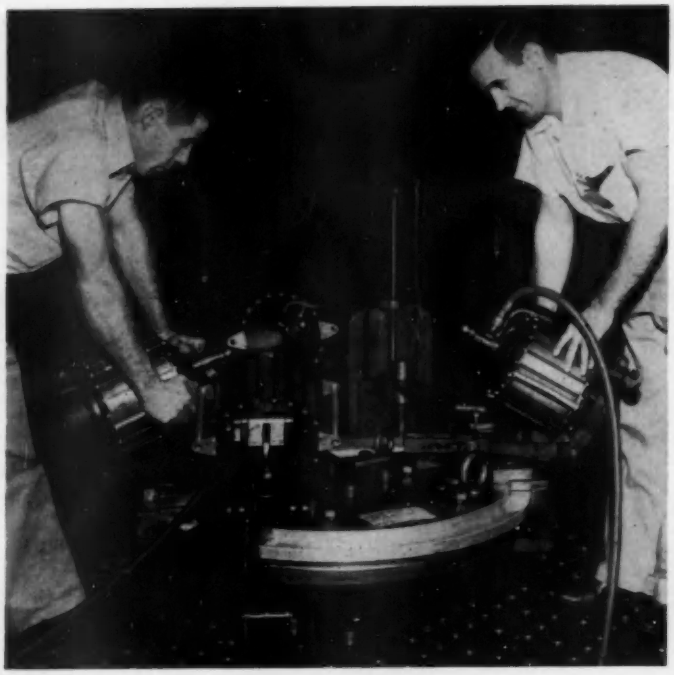


FIG. 5—Second index, fillet welding of anchors in horizontal position on air-driven quill

Lightweight, Universal JOGGLING ATTACHMENT



CVA-36507 — Four joggle cylinders installed on a Cyril Bath machine and in position for a joggle operation are shown at right. Air pressure is applied by pushing the valve at the outer end of the cylinder. Line air pressure of 85 psi will exert 50,000 lb of pressure at the ram. This pressure hose is the only outside connection necessary to operate the unit.

A UNIVERSAL attachment, developed at Chance Vought Aircraft for joggling stretch formed parts, develops a thrust of 50,000 lb but requires a lifting force of only 24 lb to index from locked to open position.

The attachment may be utilized wherever shop air pressure is available and is adaptable to any of the various stretch presses without alteration.

Provision for attachment is a 3½-in. diameter hole in the stretch die located approximately at the center of the joggle and three to eight inches inside the die contour. Time required for set up and adjustment is usually less than one minute per attachment. At Vought five attachments have been used on one die simultaneously. The number of attachments applied is limited only by the length of the die. Width required for mounting one unit is nine inches. This universal attachment will accept parts up to eight inches.

Forming joggles while stretch tension is held on the part eliminates contour deformation experienced in second operation joggling thus eliminating extensive hand finishing previously required to set joggles and correct contour. Combining operations also reduces handling time and production costs.

Large savings have been realized at Chance Vought in the manufacture of a series of "Z" section frames for the F8U-1 Crusader. These frames are of heavy aluminum, brake formed and extruded, some having return flanges and requiring joggles in one flange only. Accurate, well defined joggles were produced during stretch forming with the joggling attachments thus retaining accurate contour and bevels.

License has been let to the Cyril Bath Co., Solons, Ohio, for manufacture of the attachments.

• • •

Dealer-Factory Relations Seen In Peril Under Two State Bills

Automobile manufacturers are worried that new car dealers, through intemperate efforts to enact state legislation governing dealer-factory relationships, may kill the historic franchised system of distribution. Two states, Colorado and Arkansas, are considering such bills. They would put control of the automobile business under dealer-influenced administrators.

Most vocal opponent to date has been General Motors Corp., through Wm. F. Hufstader, vice-president of distribution. He bluntly warned a Colorado House Judiciary Committee that if the present bill under consideration becomes law, the automobile industry may be forced to abandon its present system of enfranchised dealers in that state. The only alternative, he warned, would be a distribution system based on sales to any person licensed as a motor vehicle dealer.

In a forthright denunciation of the measure, Hufstader said, "It is apparent that the bill is not designed to serve a public purpose, but is solely in the interest of certain private persons—the present dealers—and is intended to perpetuate their position as retailers and to prevent a manufacturer from substituting some other dealer who will do a better job of serving the public."

In effect, he said, cancellation or non-renewal of dealers' contracts would be prohibited altogether. It would thus be virtually impossible for a manufacturer to protect itself or the public against unscrupulous or inefficient dealers. At the same time, it would close the retail automobile field to those who want to become dealers, and tend to lessen competition.

Hufstader also scored the proposed bill as class legislation imposing revolutionary liabilities and stringent regulations upon manufacturers' relations with franchised dealers. He warned that it could lead to similar controls of other industries, and eventually to regulation of all businesses as public utilities.

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Annual Lubrication Meeting of the API Marketing Division

More Frequent Engine Oil Changes Among Recommendations of the Oil Industry

By Joseph Geschelin

THAT some 150,000 more skilled mechanics will be needed to service and repair our motor cars by 1965 was estimated by Carl T. Doman, Ford Division service manager in his talk before the 8th Annual Lubrication Meeting of the API Marketing Division in Detroit last month. This number will be needed unless, in the meantime, the automotive and petroleum industries working together either can improve the productivity of mechanics or decrease maintenance through improvement in lubricants and design.

Although this meeting was billed as a contribution by motor car producers and petroleum suppliers to their mutual customer, the motorist, the papers and subsequent discussion indicated that some controversy still exists between the principals in this broad field. For one thing the oil industry feels that crankcase changes must be made more frequently—not less than 1000-mile intervals, sometimes even at 500 miles. The evidence shows that motor car producers have specified much longer periods in the interest of reducing maintenance cost to the customer. This time a number of petroleum experts showed evidence that oil deterioration is a serious matter and the only way to combat it is to change oil more frequently.

Passenger car engineers still are not satisfied with the multi-grade engine lubricants. Doman pointed out that while the present API classification system is good theoretically, it fails to meet requirements because individual oil companies place their own interpretation upon the service for which their grades are satisfactory. For example, Ford now specifies in its service publications that the only oil it will recommend for heavy and extra heavy-duty truck service is a special designation—MS (S-1), a superior grade.

Automotive service managers also asked for improved chassis lubricants, still better grades of Type A transmission and power steering lubes capable of keeping the new and higher stressed automatic transmissions on the road. Too, they want greater improvement in rear axle lubes. Buick, for example, finds it necessary to supply its own packaged lube both for the initial fill and for any field service and will not recommend commercial multi-purpose lubes as they stand today.

The oil experts counter these demands with a plea for the return of filler plugs, and factory recommendations requiring owners to drain and change rear axle lubes at least once a year. They also disagree with manufacturers' recommendations for crankcase oil changes, and close ranks to demand that changes be made at least every 1000 miles if engine life is to be preserved.

There seemed to be agreement that motor car service requirements should be geared to the way cars are operated. One survey indicates that almost ⅔ of the cars on the road operate under stop-and-go or bumper-to-bumper conditions. Others operate under mixed driving conditions while a smaller percentage is mostly in high speed driving. Oil changes and chassis lube schedules should be recommended to meet these widely varying conditions, including adjustment for climatic conditions as well. That is the argument of the oil experts.

Getting back to the specific speakers, Carl Doman pointed out that considerable progress has been made cooperatively in recent years. Ford records show that piston ring life has increased greatly, going up to 75,000 plus miles in 1955. Taxicabs in New York City show many units still operating around 100,000 miles without removing the heads. Many police cars have covered 125,000 miles without once removing the heads.

He asked the oil industry for improvement in oil quality to reduce the formation of sludge in engines under cold operating conditions. He believes this problem will be intensified by the trend to higher horsepower engines operating at a low load factor in congested traffic.

Doman believes that cold sludging can be relieved by better engine ventilation; improved control of oil temperature under low temperature conditions; by satisfactory performance of all "MS" oils in cold weather. Filtration is felt to be an important key and Doman proposes that the engine builder supply a satisfactory oil filter, the service man maintains the

(*Turn to page 424, please*)

German Aviation Has $200 Million in Contracts

By J. H. W. Kerston

PROMINENT American aeronautical manufacturers are linking their resources and experience with the formerly well-known German firms which now represent the Federal Republic's fledgling aircraft industry. Dormant for 10 years after the war, the German industry has some $200 million in German air force contracts signed, in addition to some civilian orders.

Having missed out on a decade of aviation progress, the German industry decided at the outset to arrange for licensing agreements with foreign manufacturers as an alternative to investing huge sums in development work. Even without such expenditures, the industry faces substantial costs for rehabilitation and rebuilding of its plants and equipment, although no more than three years' work is under contract.

In organizing four production combines, the seven German aircraft manufacturers have provided a better economic basis for their task. Moreover, since none of the participating firms is in a position of building complete fuselages individually, they are now able to pool their resources and tap a broader area for their labor supply.

The combines are divided into two southern and two northern groups. One southern group includes Messerschmitt AG and Ernst Heinkel AG. The second group consists at present solely of Dornier-Werke GmbH. Flugzeugbau Nord GmbH, Hamburg, one of the northern groups, includes the Finanz- und Verwaltungs-Gesellschaft Weser GmbH, Hamburger Flugzeugbau GmbH, formerly Blohm & Voss Flugzeugbau, and Siebel Werke ATG GmbH. The other northern group includes Focke-Wulf Flugzeugbau GmbH and the aeronautical firm, headed by Professor Blume.

To Build More Than 1000 Planes

Current contracts for more than 1000 planes are divided among the following firms:

Flugzeugbau Nord will build 117 Noratlas N2501 twin-tailed, twin-engined transport planes which are similar to the Fairchild craft used by the U. S. Air Force. The French licensor, SNCA du Nord, will receive some $600,000 in fees for technical assistance plus $12,000 for every plane built. The manufacturing program is divided among Siebel for wings, Hamburger Flugzeugbau for tail assemblies, and Weser for all other frame components and final assembly. Weser has reserved its Einswarden plant for this purpose.

For its second plant in Lemwerder, Weser has a contract for demothballing and assembling 558 F84F Thunderstreak sweptwing jet fighters and RF84F Thunderflash reconnaissance jets which are being furnished by the United States under a lease agreement. The planes will be tested prior to delivery by Republic, the U. S. manufacturer of F84s. Weser expects to contract part of the subsequent maintenance work.

In addition, Weser will assemble 26 Vertol H21 helicopters which the German Air Force has purchased from the American manufacturer. Vertol and Weser are said to have signed a working agreement. Meanwhile, Hamburger Flugzeugbau is cooperating with a Spanish firm in drawing up plans for a two-engined, 48-passenger, turboprop plane for short and medium hauls.

The other northern combine, Focke-Wulf and Blume, will build 194 Piaggio P-149Ds, a conventional trainer, licensed by an Italian manufacturer. The plane will be equipped with a 260/270 hp Lycoming engine. Focke-Wulf will invest close to $400,000 in rebuilding its facilities. When this work is finished in autumn 1957, production will begin at the rate of five to six planes a month. On completion of the contract within four years, the company may also build the four-seater trainer for public use.

Blume has also designed the first German private plane, a single-engined craft, now in production, and known as the B1-500 VO.

The southern group of Messerschmitt and Heinkel will build 360 Fouga CM170R Magisters, a French twin-jet trainer. Messerschmitt also has shown its new Me-200 jet trainer, which was developed in Spain by Prof. Messerschmitt as the HA-200.

Dornier, the only member of the other southern group, has been given an order for 428 Do27s, a newly-developed military observation plane which has attracted widespread attention because of its modest runway requirements and exceptionally slow flying speeds. A French manufacturer has expressed interest in building the plane under license. The Do27 is a successor to the Do25, developed in Spain. It is powered by an American Lycoming engine.

To Buy American Planes

To meet its 2383 plane goal, the German Air Force has also purchased 90 F86K Sabres from North American (now manufactured for NATO Forces by Fiat in Italy), five Grumman SA16 Albatross am-

(*Turn to page 420, please*)

Submerged Fuel Pumps for Higher-Vapor-Pressure Fuels

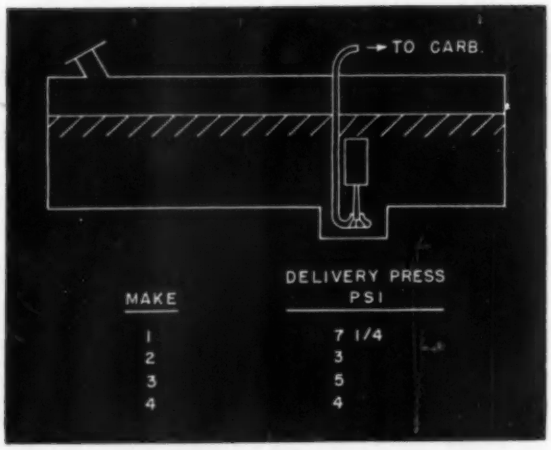


FIG. 1—Submerged fuel pump installation

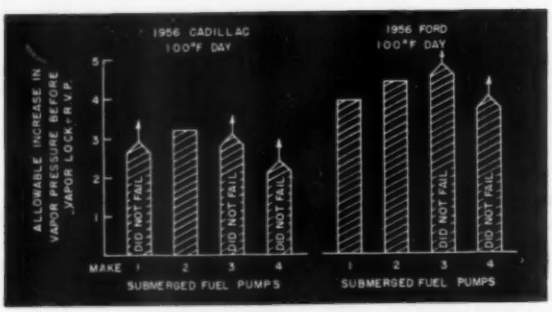


FIG. 2—Comparison of submerged pumps with standard

THERE is talk in the industry that some cars in the near future may have their fuel pumps mounted inside or next to the fuel tank. The reason for moving the fuel pump from its present location on the engine to the rear of the car is simple —with all the power-driven auxiliaries now being put in the engine compartment, and with promises of even more, under-hood temperatures in the summer time may reach a point where there is danger of gasoline commencing to boil at the pump inlet. The pump then may no longer be able to supply sufficient fuel to the engine and the car may not run very well or perhaps not at all because of vapor lock.

To investigate the effects of keeping fuel in the line under pressure from the tank to the carburetor, du Pont's Petroleum Laboratory obtained and tested four of these new submerged fuel pumps from four manufacturers who are competing for this market. Figure 1 shows how these pumps are mounted in a car fuel tank.

The pumps were tested on a 1956 Ford and 1956 Cadillac on a chassis dynamometer set for a 100F day. The cars were driven for one hour and a half at 60 mph, simulating turnpike driving, followed by five minutes of idle. The heat stored in the engine from this high speed driving was then allowed to soak into the fuel system during a 10-minute shutdown. Following this soak period the car was restarted and accelerated to 60 mph. The relative performance of the pumps was measured by operating on a com-

(*Turn to page* 350, *please*)

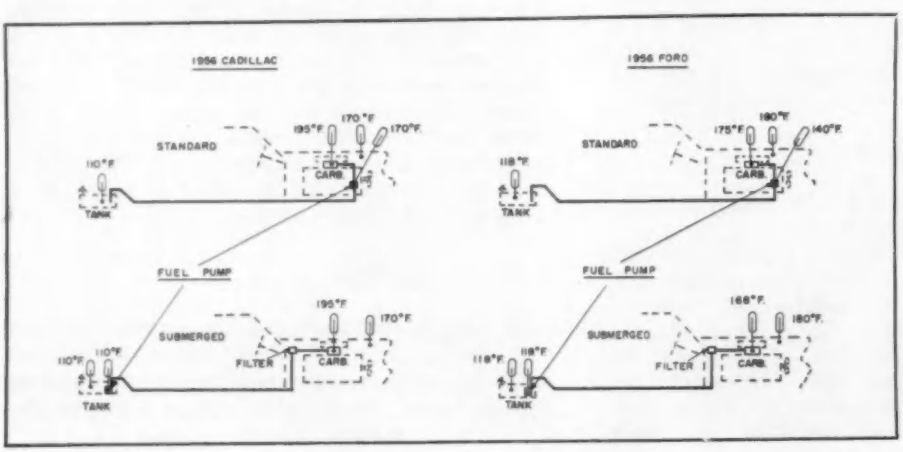


FIG. 3 — Maximum fuel system temperatures, measured after 10 min shutdown following 1½ hr driving at 60 mph on 100 F day

Here's why stainless steel is much better than carbon steel for oil ring expanders:

SS-50U

STAINLESS STEEL RETAINS TENSION UNDER HEAT

Austenitic stainless steel holds its room-temperature tension at engine operating temperature much better than the carbon steels that have served so long so well.

STAINLESS STEEL RESISTS CORROSION

Stainless steel is impervious to the corrosive elements found in internal combustion engines. Carbon steels, under the corrosive effects of combustion gases, are subject to acid attack which encourages breakage, and to deposits of carbon and varnish, which lessen efficiency.

STAINLESS STEEL RESISTS WEAR

Because of its work-hardening characteristics, this stainless steel gets harder as it wears, developing more resistance to wear. This makes Sealed Power's new stainless steel expander outwear carbon steel expanders.

THE NEW SEALED POWER SS-50U STAINLESS STEEL OIL RING . . .

This is the first oil ring designed to take full advantage of the exceptional properties of austenitic stainless steel. Its uniform high radial pressure against the cylinder wall assures maximum oil control. Its axial pressure produces effective side-sealing action, preventing oil waste and "smoking" under high vacuum. Its circumferential pressure makes the expander independent of groove depth, conforms to the bore, makes installation easy.

SEALED POWER CORPORATION • MUSKEGON, MICHIGAN • ST. JOHNS, MICHIGAN • ROCHESTER, INDIANA • STRATFORD, ONTARIO

DETROIT OFFICE • 7-236 GENERAL MOTORS BUILDING • PHONE TRINITY 1-3440

Sealed Power Piston Rings

PISTONS • CYLINDER SLEEVES

Leading Manufacturer of Automotive and Industrial Piston Rings Since 1911

Largest Producers of Sealing Rings for Automatic Transmissions and Power Steering Units

hr driving at 60 mph on 100 F day

One end of the ferrules is cut at an angle as shown to distribute stresses when fuel manifold is put into service. The Inconel pig-tails are brazed to the ferrule, using copper rings which slip inside the ferrule and stop at the shoulder on the square end.

High Precision Brazing of Jet Engine Fuel Manifolds

FUEL manifolds for the main burner of the Pratt & Whitney J-57 engine are made up of 755 separate pieces, jig-brazed into an assembly which has a diameter of 37 in. There are 380 brazes used; and diameter of the unit is held to a tolerance of 0.015 in.

The manifolds are made by National-U. S. Radiator Co. under sub-contract to both Pratt & Whitney Aircraft and the Aircraft Division of Ford Motor Co.

The care exercised in checking materials and components is illustrated by the procedures followed in ordering, fabricating and inspecting tubing used for the manifold pig-tails and tubing for the ferrules to which the other tubing is brazed.

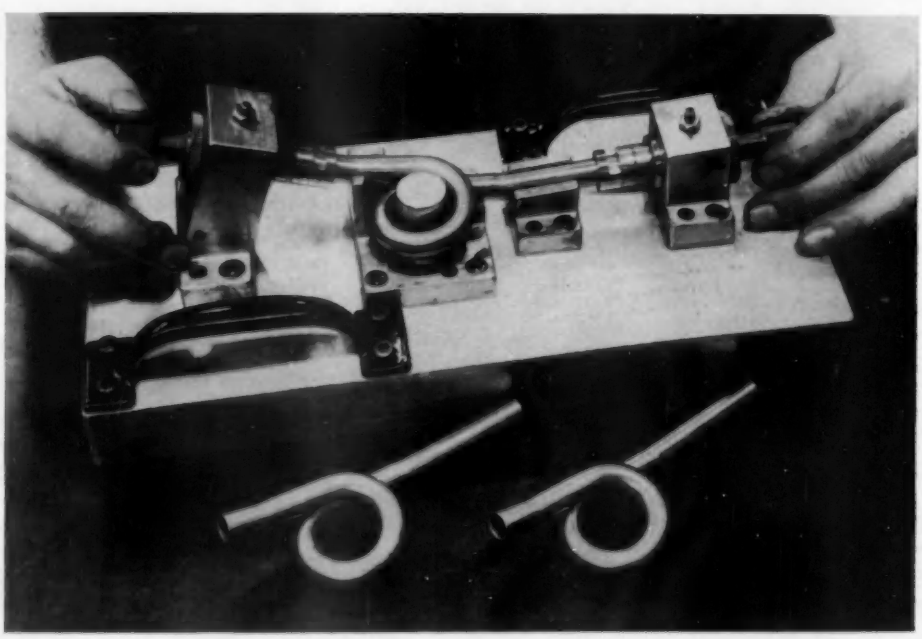
Tubing for the pig-tails is 0.3125-in. OD seamless Inconel tubing supplied by Superior Tube Co. to AMS 5580C.

Tubing for the ferrules is type 347, a columbium-bearing modification of type 304 stainless steel which prevents carbide precipitation and resultant intergranular corrosion when the Inconel pig-tails are copper brazed to the ferrules before assembly into the manifold. It is supplied in the soft annealed condition in four sizes—0.3835, 0.436, 0.561 and 0.623-in. OD—to Aeronautical Material Specification 5646.

Both the Inconel and the type 347 tubing are cut to length and are then chamfered and deburred on both ends.

In the production of the ferrules, the cut lengths are first reamed in a drill press to a slight shoulder on one end. The other end is cut to a 45-deg angle using a Do-All saw, with a few being cut to a 35-deg angle. Tolerance on the angle is held to plus or minus two

(*Turn to page* 366, *please*)



This fixture checks the bent Inconel tubing for both contour and diameter. Diameter tolerances are maintained within plus or minus 0.002-in. Used for fuel intake, six of these fuel bodies are assembled into a single cluster.

"CLICK" lubrication starts when your machines start!

ALEMITE OIL-MIST AUTOMATIC LUBRICATION

provides constant, uniform, foolproof lubrication— at savings up to 90%!

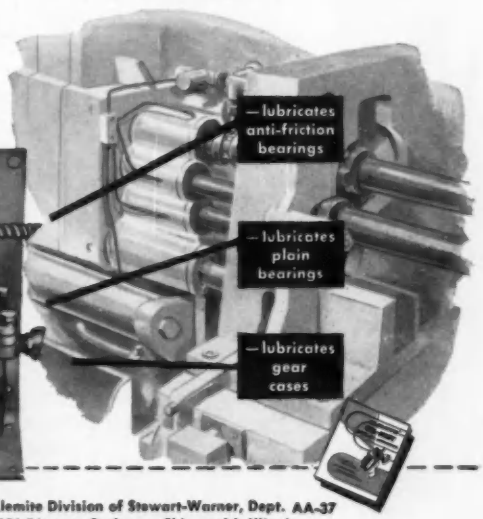
Alemite Oil-Mist *atomizes* oil into tiny, airborne particles that are distributed to bearings through tubing. It bathes all bearings with a cool film of clean oil . . . maintains uniform oil film regardless of variations in loads, temperature and speed. Simple, continuous, fully automatic. Eliminates the waste and uncertainties of the "human element" in lubrication. Uses up to *90% less lubricant* than ordinary lubrication methods!

Lubricates any bearing on any machine with one of three types of fittings:

Mist fittings for roller, ball, needle—or any anti-friction type of bearings.

Spray fittings for open and enclosed gears and chains.

Condensing fittings for plain bearings, slides, ways, vees, cams, and rollers.



8 Advantages of the Alemite Oil-Mist System

1. Continuous lubrication. Deposits fresh, clean film of oil on all surfaces of all bearings.

2. Fully automatic. Starts and stops with operation of machine switch.

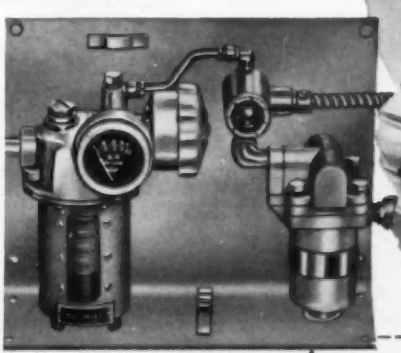
3. No guesswork. Bearings can't be overlooked, or over-lubricated!

4. Reduction of bearing temperatures. Acts as bearing coolant. Reduces bearing temperatures as much as 20°F.

5. Fewer types of oil. Reduces number of oils that must be stocked, handled and applied.

6. Elimination of downtime. All bearings are constantly lubricated while machines continue to operate.

7. Extension of bearing life. Life of grinding machine bearings have been extended from 400 to 7,000 hours!



8. As high as 90% less oil consumption. Usually consumes about 1/10th amount used by any other oiling method.

Mail coupon for Oil-Mist demonstration and information

ALEMITE
REG. U. S. PAT. OFF.

Division of STEWART-WARNER CORPORATION

STEWART SW WARNER

Alemite Division of Stewart-Warner, Dept. AA-37
1850 Diversey Parkway, Chicago 14, Illinois

☐ Please send me a FREE copy of your new and complete Oil-Mist catalog.

☐ Please have your Alemite Lubrication Representative arrange a no-obligation demonstration.

Name .....

Company .....

Address .....

City ..... Zone ..... State .....

bodies are assembled into a single cluster.

Taxicab, Motorcycle and Trailer Registrations, by States

State	Taxicabs[1]			Motorcycles			1956 Trailers and Semi Trailers		
	1956	1955	1954	1956	1955	1954	Tourist[2]	Commercial	Total
Alabama	2,317	2,331	2,572	7,450	6,753	6,437	.....	.....	16,692
Arizona	170	154	190	3,700	3,584	3,509	28,000	8,900	36,900
Arkansas	646	718	689	2,645	2,263	2,209	.....	.....	24,474
California	[3]	[4]	[4]	56,879	53,579	49,455	.....	.....	559,107
Colorado	[3]	[3]	[3]	4,236	2,700	4,415	[3]	41,172	41,172
Connecticut	1,321	688	638	4,121	4,122	3,638	21,923	10,916	32,839
Delaware	[3]	[3]	[3]	554	549	511	.....	.....	8,926
District of Columbia	11,810	11,348	10,437	533	502	425	.....	.....	1,698
Florida	27,054	23,166	17,628	20,930	18,165	16,506	127,702	35,273	162,975
Georgia	[3]	[3]	[3]	6,640	7,481	1,392	27,186	14,865	42,051
Idaho	480	475	464	1,800	2,000	1,981	4,000	36,000	40,000
Illinois	9,000	8,775	8,691	23,500	23,259	22,868	.....	.....	90,000
Indiana	[3]	[3]	[3]	17,800	17,000	17,629	7,291	141,281	148,572
Iowa	[3]	[3]	[3]	9,049	8,992	9,152	.....	.....	118,464
Kansas	[3]	[3]	[3]	8,528	8,213	8,389	.....	.....	27,661
Kentucky	2,200	2,022	2,091	5,500	5,296	5,487	.....	.....	3,500
Louisiana	2,654	3,080	3,122	6,441	5,912	5,372	30,820	24,321	55,141
Maine	1,176	1,089	1,051	1,522	1,448	1,493	.....	.....	30,958
Maryland	2,651	2,641	2,538	4,642	4,686	4,675	.....	.....	27,126
Massachusetts	[3]	[3]	[3]	4,672	4,643	4,457	.....	.....	30,724
Michigan	[4]	[4]	[4]	21,351	18,892	18,672	.....	.....	292,874
Minnesota	[3]	[3]	[3]	9,540	9,467	9,576	88,459	39,545	128,004
Mississippi	1,594	1,004	919	2,189	2,225	2,452	31,636	9,702	41,338
Missouri	[3]	[3]	[3]	6,800	6,800	6,965	14,000	74,000	88,000
Montana	[3]	[3]	[3]	1,309	1,216	1,154	14,241	12,244	26,485
Nebraska	460	471	456	4,193	4,217	4,012	3,171	445	3,616
Nevada	[3]	[3]	[3]	1,393	1,824	1,310	.....	.....	11,391
New Hampshire	[3]	[3]	[3]	1,300	1,500	1,545	.....	.....	15,500
New Jersey	4,000	[3]	[3]	10,000	9,553	8,672	15,000	30,000	45,000
New Mexico	250	850	910	4,500	4,149	3,435	.....	.....	17,000
New York	26,000	24,514	24,141	21,000	20,569	18,651	.....	.....	136,000
North Carolina	3,305	3,482	3,902	7,941	7,617	7,730	78,918	22,169	101,187
North Dakota	[3]	[3]	[3]	857	886	902	3,899	579	4,478
Ohio	[3]	[3]	[3]	27,179	26,243	25,312	15,721	208,250	223,971
Oklahoma	1,619	1,735	1,725	10,370	9,120	8,303	5,704	14,809	20,513
Oregon	[3]	[3]	[3]	5,300	5,411	5,507	16,500	13,500	30,000
Pennsylvania	4,135	4,925	4,500	22,681	24,014	24,131	.....	.....	114,714
Rhode Island	1,400	320	319	1,450	1,483	1,603	.....	.....	13,900
South Carolina	1,904	2,000	2,107	4,965	5,048	4,990	2,313	9,257	11,570
South Dakota	[3]	[3]	[3]	1,650	1,581	1,555	4,275	32,500	36,775
Tennessee	2,350	4,645	4,958	5,550	5,549	5,765	3,650	.....	3,650
Texas	[3]	[3]	[3]	31,800	29,328	27,871	24,000	220,000	244,000
Utah	[4]	[3]	[3]	1,800	1,354	1,533	.....	.....	9,000
Vermont	[3]	[3]	[3]	800	812	768	.....	.....	9,400
Virginia	4,020	4,324	2,427	9,502	9,824	9,639	36,442	17,923	54,365
Washington	1,050	1,458	1,402	5,500	5,302	6,759	6,100	21,000	27,100
West Virginia	920	935	978	2,800	2,946	3,014	10,828	5,700	16,528
Wisconsin	[3]	[3]	[3]	9,600	9,628	8,910	7,700	17,000	24,700
Wyoming	[3]	[3]	[3]	822	735	849	4,577	12,431	17,008
Total	114,486	107,150	98,855	425,284	408,940	397,585	634,056	1,073,782	3,323,047

[1]—Taxicab registrations which were included in Passenger Cars in the table of U. S. Motor Vehicle Registrations by States. [2]—Includes light two-wheel trailers. [3]—Included with passenger cars. [4]—Included with trucks.

U. S. Engine Exports (Except Automotive)

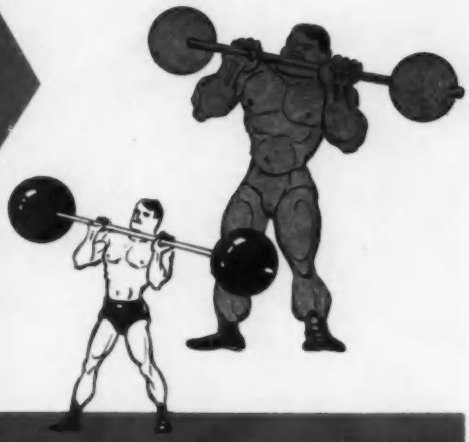
As reported by the Bureau of the Census

Type of Engine	1955		1954		1953	
	Number	Value	Number	Value	Number	Value
Gasoline						
Outboard Motors	26,796	$5,310,709	22,030	$3,987,873	17,478	$2,937,546
Marine, n.e.c.	3,274	2,135,161	2,685	1,757,127	2,690	1,805,486
Engines, incl. tractor, not over 10 hp.	148,965	5,879,507	90,010	4,045,087	81,792	4,413,559
Engines, incl. tractor, 10-50 hp.	13,506	3,364,721	10,800	2,813,722	18,521	4,608,923
Engines, incl. tractor, over 50 hp.	6,662	2,838,340	6,926	2,457,852	11,030	3,758,397
Diesel and Semi-Diesel						
Marine, not over 200 hp.	1,092	$4,051,248	1,360	$5,279,575	931	$3,488,081
Marine, over 200 to 500 hp.	279	2,881,354	497	3,292,819	180	1,582,163
Marine, over 500 hp.	51	4,969,255	45	2,315,267	48	2,930,111
Engines, incl. tractor, under 200 hp.	6,443	15,383,010	5,172	11,195,507	6,276	11,373,337
Engines, incl. tractor, 200-500 hp.	491	3,874,945	451	3,660,955	442	3,296,969
Engines, incl. tractor, over 500 hp.	270	7,685,941	244	9,639,012	222	8,771,289
All Other Egines, n.e.c.	12,892	$2,512,491	11,718	$2,654,150	12,409	$2,446,181
Total—All Engines	220,721	$60,886,682	151,948	$53,098,946	152,060	$51,412,042
Parts for Internal Combustion Engines	....	52,876,944	....	52,512,896	....	51,965,425
Total—Value Engines and Parts	....	$113,763,626	....	$105,611,842	....	$103,377,467

here's "HEAVY WEIGHT" POWER PERFORMANCE

in a light weight, man-size

WISCONSIN *Air-Cooled* ENGINE



introducing the NEW

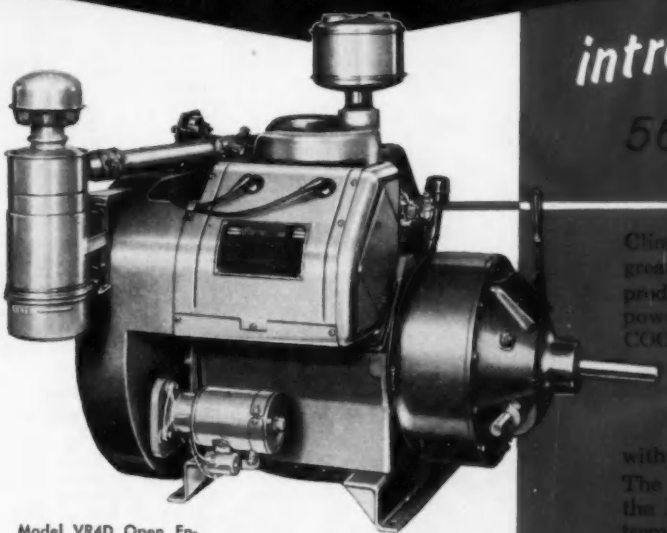
56 hp. Model VR4D

Climaxing years of engineering development, this great new engine is now being readied for early production. It offers manufacturers and users of power equipment all the advantages of AIR-COOLING, at temperatures from low sub-zero to 140° F., in an exceptionally rugged engine that measures up to any "heavy weight" industrial type liquid-cooled engine, horsepower for horsepower — with many *plus values*.

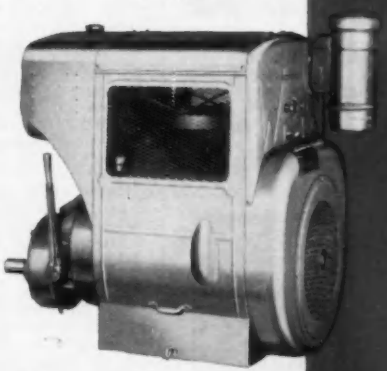
The outstanding High Torque characteristics of the Model VR4D engine, combined with its extremely rugged construction and heavy-duty stamina, provide the *load-lugging holding power* that hangs on through severe shock-load operating conditions.

Advanced "V" design provides an extremely compact power package which includes all traditional Wisconsin heavy-duty features such as tapered roller main bearings. Stellite exhaust valves and valve seat inserts, in combination with positive-type valve rotators, are standard components . . . for increased valve life and substantially lowered maintenance.

This new engine rounds out a complete line, comprising 15 models in 4-cycle single cylinder, 2- and 4-cylinder sizes, from 3 to 56 hp. Write for "Spec" Bulletin S-207. Detailed engineering data gladly supplied.



Model VR4D Open Engine with heavy-duty clutch, rotating screen, electrical equipment and pre-cleaner.



Model VR4D Power Unit with Clutch Reduction Assembly.

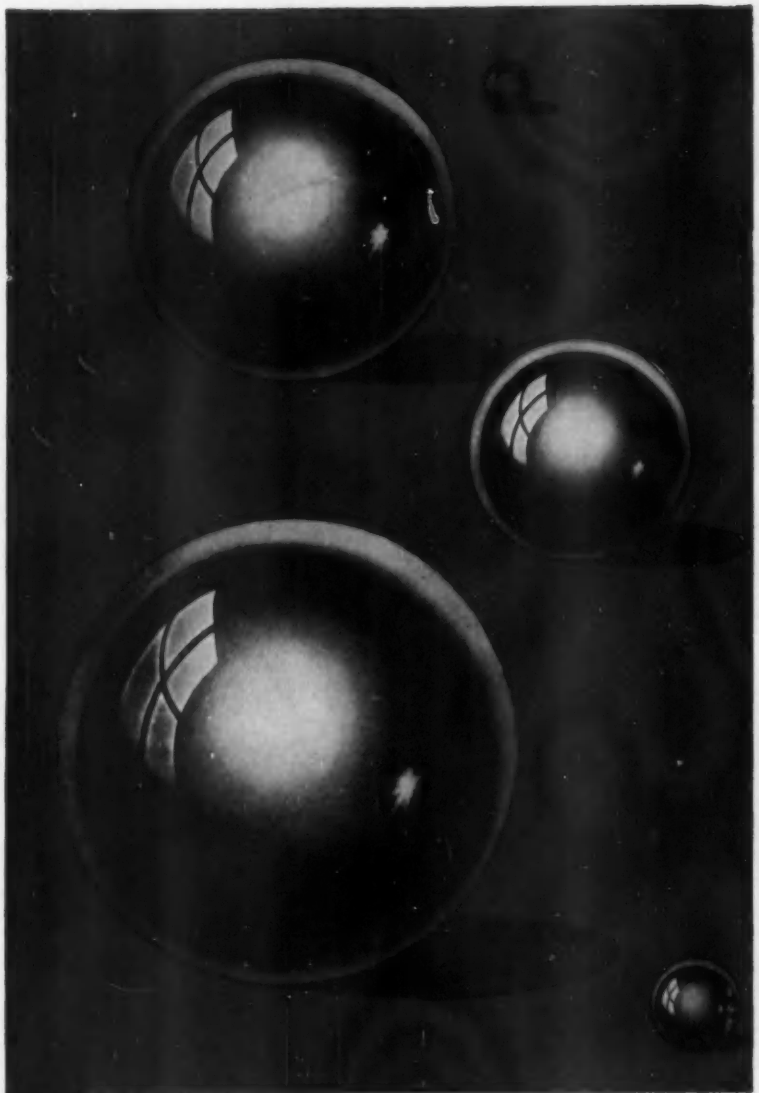
WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN

A7-6092

Engines	....	52,876,944	....	52,512,896	.... $1,965,425
Total—Value Engines and Parts	....	$113,763,626	....	$105,611,842	.... $103,377,467



COOLIDGE
Balls

CHROME ALLOY AND STAINLESS

COOLIDGE CORPORATION
MIDDLETOWN, OHIO

DIRECTORY OF MANUFACTURERS

(*Continued from page* 266)

TRUCKS (Cont'd)

PETERBILT Motors Co., Oakland 5, Calif.
REO Motors, Inc., Div. of Bohn Aluminum & Brass Corp., Lansing 20, Mich.
STUDEBAKER Div., Studebaker-Packard Corp., South Bend 27, Ind.
TRUCKSTELL Mfg. Co., Cleveland 14, Ohio.
WALTER Motor Truck Co., Ridgewood, L. I., N. Y.
WARD LA FRANCE Truck Corp., Elmira Heights, N. Y.
WHITE-FREIGHTLINER Div., White Motor Co., San Francisco 7, Calif.
WILLYS Motors Inc., Toledo 1, Ohio.

CITY AND INTERCITY BUSES

For details of their products see pages 148-149.

C. D. BECK & CO., Inc., Sidney, Ohio.
CROWN Coach Corp., Los Angeles 21, Calif.
FITZJOHN Coach Co., Muskegon, Mich.
FLXIBLE Co., Loudonville, Ohio.
FLXIBLE-TWIN COACH, see Fixible Co.
GMC Truck & Coach Div., General Motors Corp., Pontiac 11, Mich.
MACK Trucks Inc., Plainfield, N. J.
SOUTHERN COACH Mfg. Co., Inc., Evergreen, Ala.

AMERICAN TRACTORS

For details of their products see pages 150-155.

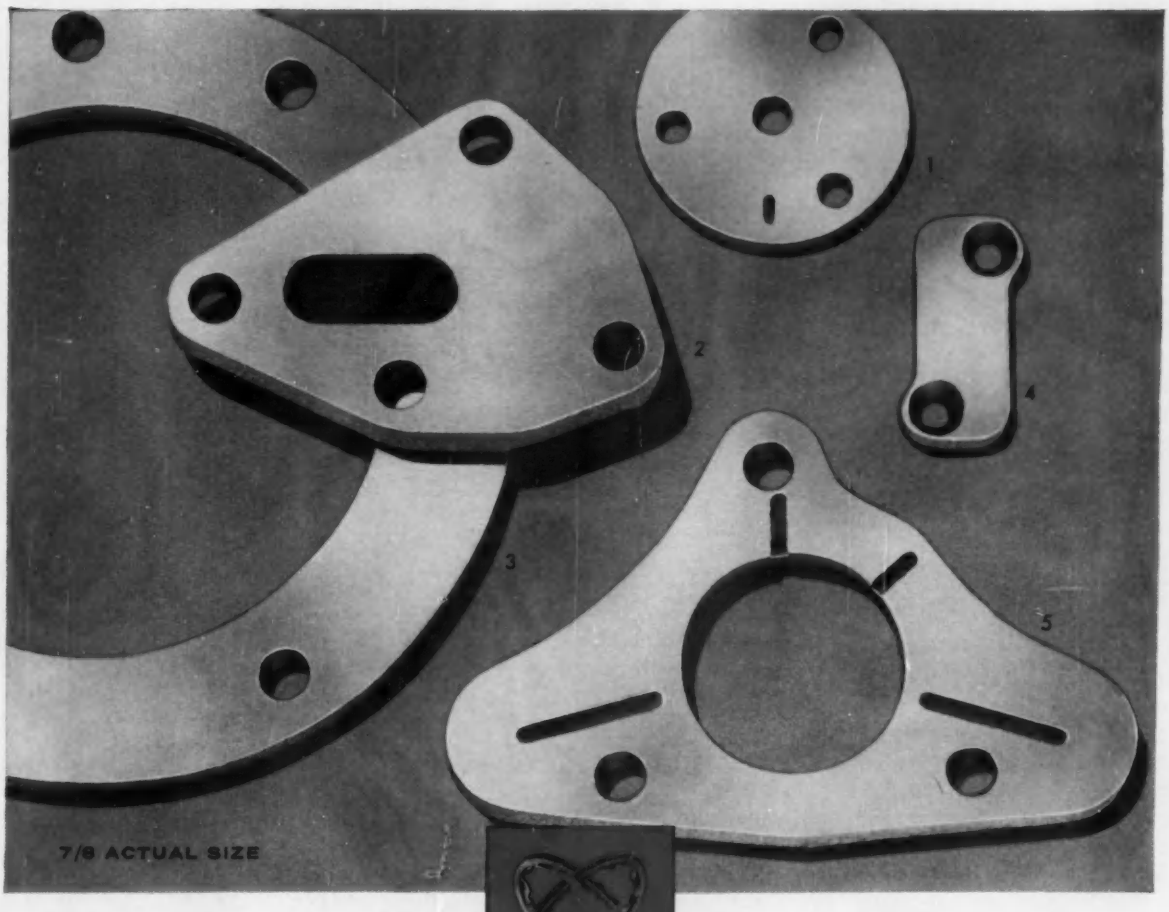
ALLIS-CHALMERS Mfg. Co., Milwaukee 1, Wis.
American Tractor Corp., Churubusco, Ind.
BROCKWAY Tractor Co., Chagrin Falls, Ohio.
J. I. CASE Co., Racine, Wis.
CATERPILLAR Tractor Co., Peoria 8, Ill.
COCKSHUT Farm Equipment Ltd., Brantford, Canada.
JOHN DEERE Waterloo Tractor Works, Deere Mfg. Co., Waterloo, Iowa.
JOHN DEERE Dubuque Tractor Works, Deere Mfg. Co., Dubuque, Iowa.
EUCLID Div., General Motors Corp., Cleveland 17, Ohio.
FERGUSON, see Massey-Harris-Ferguson.
Tractor & Implement Div., FORD Motor Co., Birmingham, Mich.
FRIDAY Tractor Co., Hartford, Mich.
INTERNATIONAL Harvester Co. (I.H.C.), Chicago 1, Ill.
MASSEY-HARRIS Div., Massey-Harris-Ferguson Inc., Racine, Wis.
Massey-Harris-Ferguson Inc., Detroit 32, Mich.
McCORMICK, see International Harvester Co.
M-H-F, Massey - Harris - Ferguson Inc., Racine, Wis.
MINNEAPOLIS-MOLINE Co., Minneapolis 1, Minn.
OLIVER Corp., Charles City, Iowa.
OLIVER Corp., Cleveland 17, Ohio.
OLIVER Corp., Plant No. 2, South Bend 21, Ind.
R. H. Sheppard Co., Inc., Hanover, Pa.
TERRATRAC, see American Tractor Corp.
TIGER Tractor Corp., Keyser, W. Va.

U. S. CIVIL AND MILITARY AIRCRAFT

For details of their products see pages 188-189, 192-193.

AERO COMMANDER, see Aero Design and Engineering Co.

(*Turn to page* 324, *please*)



From the producer of piston rings **used in 1 out of every 3 new cars . . .**

Precision castings at "captive cost"

Muskegon's Sparta Foundry now offers the finest in small precision castings—at surprisingly low cost! Consider these advantages:

1) Complete service from design conception to finished product.
2) Ready-to-install parts—with surface finishes and flatness to your specifications; with width tolerances to within plus or minus .001"—completely deburred, drilled, reamed or tapped.
3) Castings of high carbon cast iron, high strength alloy cast iron, cast bronze and sintered powdered metal parts—plus Muskegon developed Spartaloy metals to meet unusual heat, wear and corrosion needs.

(1) Compressor thrust plate. (2) Valve cover plate. (3) Crankshaft retaining ring. (4) Automatic transmission governor cover plate. (5) Camshaft thrust plate.

WRITE FOR YOUR FREE SAMPLE KIT

This assortment of miniature casting samples shows what is being done in precision castings . . . what metals can be used . . . how they can be formed and machined for you. Write today! Sparta Foundry Co., Sparta, Mich.

Since 1921... The engine builders' source!

MUSKEGON Piston Ring Co.

PLANTS AT MUSKEGON, MICHIGAN SPARTA, MICHIGAN
ROTARY SEAL DIVISION PLANTS AT SPARTA, MICHIGAN CHICAGO, ILLINOIS

AERO COMMANDER, see Aero Design and Engineering Co.
(Turn to page 324, please)

Only
"MAGNAMATIC"
SCREWDRIVERS—
• Control Torque—Control Noise.
• Completely disengage the instant the fastener is run to desired tightness.
• Do not require readjustment to hold torque value.
28-MONTH SERVICE RECORD
Chicago Pneumatic
Pneumatic Tools • Air Compressors • Electric Tools • Diesel Engines • Rock Drills • Hydraulic Tools • Vacuum Pumps • Aviation Accessories

TESTED BY TIME —ON THE LINE!

PROVES "MAGNAMATIC" IS...

Capacities: #4 screws to ⅝" bolts.
Reversible and non-reversible types

FIRST in reducing work spoilage

FIRST to eliminate clutch buzz that adds to tool maintenance

FIRST to overcome exhaust noise

Air-driven "Magnamatic" is the *only* Controlled-Torque screwdriver-nutrunner to prove itself in over two years of "on the line" service. In hundreds of applications, Magnamatic "One-Shot" Screwdrivers are used where proper tightness is all-important in eliminating stripped threads, sheared fasteners, damaged parts. Tell us your fastener problem. There are 13 models of "Magnamatic" to help you step up production and reduce fastening costs.

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8 East 44th Street, New York 17, N. Y.

- ☐ Please send me FREE booklet SP-3165 "Magnamatic Case Histories."
- ☐ Please send me "Magnamatic" Bulletin SP-3126.
- ☐ Have representative call.

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

DIRECTORY OF MANUFACTURERS

(Continued from page 320)

U. S. CIVIL AND MILITARY AIRCRAFT (Cont'd)

Aero Design and Engineering Co., Bethany, Okla.
BEE AVIATION Associates, Inc., San Diego 9, Calif.
BEECH Aircraft Corp., Wichita 1, Kan.
BOEING Airplane Co., Seattle 24, Wash.
CALL AIR, Afton, Wyo.
CESSNA Aircraft Co., Wichita, Kan.
CHAMPION Aircraft Corp., Osceola, Wis.
CHANCE VOUGHT Aircraft, Inc., Div. United Aircraft Corp., Dallas, Tex.
COLONIAL Aircraft Corp., Sanford, Me.
CONVAIR Div., General Dynamics Corp., San Diego 12, Calif.
DOUGLAS Aircraft Co., Inc., Santa Monica, Calif.
FAIRCHILD Aircraft Div., Fairchild Engine & Airplane Corp., Hagerstown, Md.
FLETCHER Aviation Corp., Rosemead, Calif.
GRUMMAN Aircraft Engineering Corp., Bethpage, L. I., N. Y.
HELIO Aircraft Corp., Norwood, Mass.
LOCKHEED Aircraft Corp., Burbank, Calif.
The Glenn L. MARTIN Co., Baltimore 3, Md.
McDONNELL Aircraft Corp., St. Louis 3, Mo.
MOONEY Aircraft, Inc., Kerrville, Tex.
NORTH AMERICAN Aviation, Inc., Los Angeles 45, Calif.
NORTHROP Aircraft, Inc., Hawthorne, Calif.
PIPER Aircraft Corp., Lock Haven, Pa.
REPUBLIC Aviation Corp., Farmingdale, L. I., N. Y.
STITS Aircraft, Riverside, Calif.
TAYLORCRAFT, Inc., Conway, Pa.
TEMCO Aircraft Corp., Dallas 2, Tex.

FOREIGN CIVIL AND MILITARY AIRCRAFT

For details of their products see pages 189-191, 193-194.

AUSTRALIA

de HAVILLAND, see de Havilland Aircraft Co., Ltd., listing under Great Britain.

BELGIUM

AVIONS FAIREY S.A., Gosselies, Belgium.
Societe Anonyme Belge De Constructions Aeronautiques (S.A.B.C.A.), Haren-Bruxelles, Belgium.

GREAT BRITAIN

AUSTER Aircraft, Ltd., Rearsby, Leicester, Eng.
AVIATION TRADERS (Engineering), Ltd., London W.1, England.
AVRO, see A. V. Roe & Co., Ltd.
A. V. ROE & Co., Ltd., Middleton, Manchester, Eng.
BLACKBURN & General Aircraft Ltd., Brough, East Yorks, Eng.
BRISTOL Aeroplane Co., Ltd., Filton House, Bristol, Eng.
de HAVILLAND Aircraft Co., Ltd., Hatfield, Hertfordshire, Eng.
ENGLISH ELECTRIC Co., Ltd., Warton Aerodrome, Eng.
FAIREY Aviation Co., Ltd., London W.1, England.
FOLLAND Aircraft, Ltd., Hamble, Southampton, Eng.
GLOSTER Aircraft Co., Ltd., Gloucestershire, Eng.
HANDLEY PAGE Ltd., Cricklewood, London, N.W.2, Eng.
HAWKER Aircraft Ltd., Kingston-Upon-Thames, Surrey, Eng.
HUNTING PERCIVAL Aircraft Ltd., Luton Airport, Bedfordshire, Eng.
SAUNDERS-ROE, Ltd., Osborne, East Cowes, Isle of Wight, Eng.
SCOTTISH AVIATION, Ltd., Prestwick Airport, Ayrshire, Scotland.
SHORT Brothers & Harland Ltd., Queens Island, Belfast, Ireland.
VICKERS - ARMSTRONGS (Aircraft), Ltd., Weybridge, Surrey, Eng.
WESTLAND Aircraft Ltd., Yeovil, Eng.

CANADA

de HAVILLAND, see de Havilland Aircraft Co., Ltd., listing under Great Britain.

FINLAND

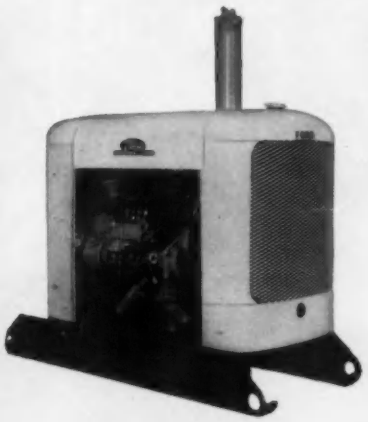
VALMET OY Aircraft Factory, Tampere, Finland.

FRANCE

S. A. des Ateliers d'Aviation, Louis BREQUET, Paris 16, France.
Generale Aeronautique Marcel DASSAULT, Saint-Cloud, France.
Societe FOUGA & Cie, Paris 16e, France.
Avions Max HOLSTE, Paris 8, France.
Societe de Construction des Avions HUREL-DUBOIS, Meudon, France.
MORANE-SAULNIER, Seine, France.
OUEST AVIATION, see (S.N.C.A.S.O.).
Etablissements Henry POTEZ, Paris 46, France.

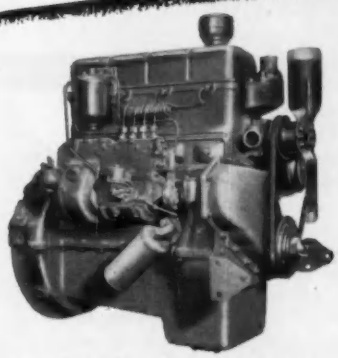
(Turn to page 326, please)

Announcing
THE
FORD "220" DIESEL
...now available as a complete power unit!



POWER UNIT

Ford
INDUSTRIAL ENGINES AND POWER UNITS



ENGINE ASSEMBLY

Looking for really *modern* diesel power? Here it is in one complete 4-cylinder, 220-cu. in., skid-mounted power unit.

Modern design throughout makes this Ford diesel outstanding in power and economy. It delivers more actual sustained power at the flywheel than ever before possible in engines of comparable displacement. Exceptionally rugged in construction, it is quality-built throughout for longer life.

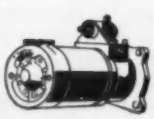
Features such as replaceable cylinder sleeves, aluminum pistons and balanced crankshaft, for example, give you peak performance, longer engine life. Overhead-valve efficiency boosts economy, makes servicing easier.

Drop in and see your Ford Industrial Power Dealer for full information on this modern, super-efficient Ford diesel. Or write: Industrial Engine Department, Ford Division of Ford Motor Company, P.O. Box 598, Dearborn, Michigan.

WET CYLINDER SLEEVES
Replaceable cylinder sleeves are positively located, yet easily removable —eliminating costly reboring. Synthetic rubber seal ring at bottom of jacket.

FOUR-WAY INJECTOR
Precision made four-way injector disperses diesel fuel evenly into each cylinder for efficient combustion, more power, and greater fuel economy.

ROTATING EXHAUST VALVES
Exhaust valves are free-turn type, designed to rotate each time valve opens and closes. Makes for even wear, helps maintain compression longer.



12-VOLT ELECTRICAL SYSTEM
High-torque 12-volt starting motor provides faster cranking speeds and delivers extra power for quick starts even on the coldest mornings.

YOUR JOB IS WELL-POWERED WHEN IT'S FORD-POWERED!

France.

(*Turn to page 326, please*)

Illustrating the smallest and the largest Apex impact sockets proves only that you can get an Apex socket to run any size of hex nuts you may be using on your production or maintenance work.

These extremes of socket size do not show the precision machining of the high carbon electric furnace alloy steel used in Apex sockets. Nor do they show the cold broaching and carefully controlled heat treating that enables Apex sockets to withstand the severe shocks and strains of heavy-duty service.

But you can easily prove that Apex impact sockets will outperform and outlast ordinary sockets. Just try Apex impact sockets on your work—you'll soon see that freedom from quick wear-out and breakage will help boost productive output per tool and, at the same time, help lower your tool costs.

Catalog 29-R lists over 5,000 types and sizes of Apex Nut Running Tools; write, on your company letterhead please, for your copy.

DIFFICULT FASTENING PROBLEM?
Send sketch or blueprint, we'll quote promptly

APEX
THE APEX MACHINE & TOOL COMPANY
1043 S. Patterson Blvd. • Dayton 2, Ohio

DIRECTORY OF MANUFACTURERS

(*Continued from page 324*)

FOREIGN CIVIL AND MILITARY AIRCRAFT (Cont'd)

Societe Industrielle Pour L'Aeronautique (S.I.P.A.), Seine, France.
Societe Nationale de Constructions Aeronautiques Du Nord (S.N.C.A.N.), Chatillon Bagneux, France.
SUD-EST AVIATION, Societe Nationale de Constructions Aeronautiques, Paris 16, France.
Societe Nationale de Constructions Aeronautiques du Sud-Ouest (S.N.C.A.S.O.), Paris 16, France.

ITALY

AERonautica MACCHI S.P.A., Varese, Italy.
FIAT Societa per Azioni, Torino, Italy.
PIAGGIO & C. Soc. p. Azioni, Genova, Italy.

SPAIN

Aeronautica Industrial, S.A. (A.I.S.A.), Madrid 2, Spain.
La HISPANO-Aviacion S.A., Madrid, Spain.

SWEDEN

Svenska Aeroplan AB (SAAB), Linkoping, Sweden.

U. S. ROTARY WING AIRCRAFT

For details of their products see page 195.

BELL Aircraft Corp., Fort Worth 1, Tex.
CESSNA Aircraft Co., Wichita, Kan.
DOMAN Helicopters, Inc., Danbury, Conn.
GYRODYNE Co. of America, Inc., St. James, L. I., N. Y.
HILLER Helicopters, Palo Alto, Calif.
KAMAN Aircraft Corp., Bloomfield, Conn.
KELLETT Aircraft Corp., Willow Grove, Penn.
McDONNELL Aircraft Corp., St. Louis 3, Mo.
ROTOR-CRAFT Corp., Glendale 1, Calif.
SIKORSKY Aircraft Div., United Aircraft Corp., Bridgeport 1, Conn.
VERTOL Aircraft Corp., Morton, Pa.

U. S. AIRCRAFT ENGINES

RECIPROCATING TYPE

For details of their products see pages 196-197.

Aircooled Motors, Inc., Syracuse 8, N. Y.
CONTINENTAL Motors Corp., Aircraft Engine Div., Muskegon, Mich.
FRANKLIN, see Aircooled Motors, Inc.
JACOBS Aircraft Engine Co., Pottstown, Pa.
LYCOMING Div., Avco Manufacturing Corp., Williamsport, Pa.
PRATT & WHITNEY Aircraft, Div. United Aircraft Corp., East Hartford 8, Conn.
Curtiss-WRIGHT Corp., Wood-Ridge, N. J.

AIRCRAFT GAS TURBINES

For details of their products see pages 198-201.

UNITED STATES

ALLISON Div., General Motors Corp., Indianapolis 6, Ind.
BOEING Airplane Co., Seattle 24, Wash.
CONTINENTAL Aviation & Engineering Corp., Detroit 15, Mich.
FAIRCHILD Engine Div., Fairchild Engine & Airplane Corp., Deer Park, L. I., N. Y.
GENERAL ELECTRIC Co., Aircraft Gas Turbine Div., Cincinnati 15, Ohio.
PRATT & WHITNEY Aircraft, Div. of United Aircraft Corp., East Hartford 8, Conn.

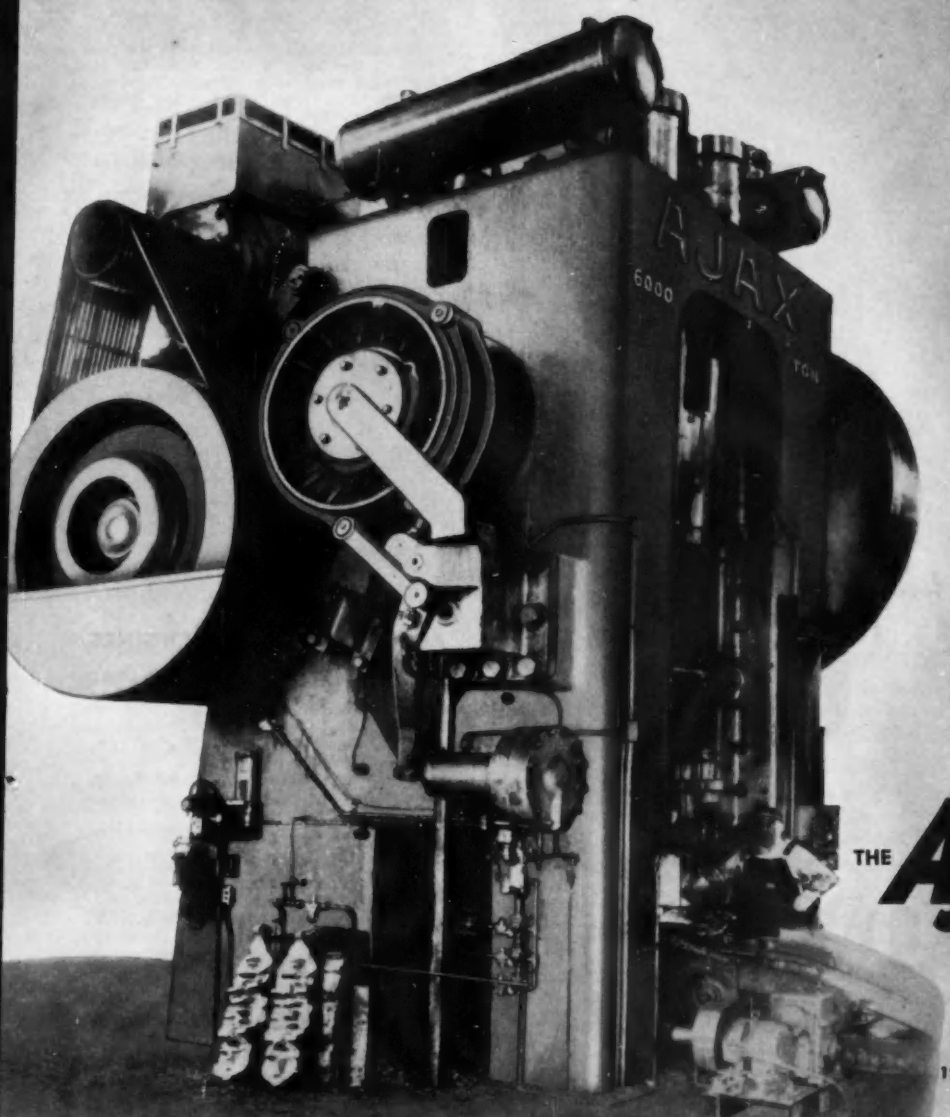
(*Turn to page 328, please*)

High Production of Automobile Crankshaft Forgings on AJAX *High Speed* Forging Presses

Production More than Doubled Over Former Methods on 6000 Ton Ajax Forging Presses

Crankshafts With Less Draft on Counterweights for Lower Machining Costs

For Your Forging Needs . . . Ajax Forging Presses Sizes 300 Ton to 8000 Ton



THE **Ajax** MANUFACTURING COMPANY

CLEVELAND 17, OHIO

110 S. DEARBORN ST., CHICAGO, ILL.

W. P. WOOLDRIDGE CO.

1209 BURLINGAME AVE., BURLINGAME, CAL.

6440 FLEET ST., LOS ANGELES 22, CAL.

Write for Bulletin 75 C

(Turn to page 328, please)

DIRECTORY OF MANUFACTURERS

(Continued from page 324)

AIRCRAFT GAS TURBINES (Cont'd)

WESTINGHOUSE Electric Corp., Aviation Gas Turbine Div., Kansas City, Mo.
WRIGHT Aeronautical Div., Curtiss-Wright Corp., Wood-Ridge, N. J.

GREAT BRITAIN

ARMSTRONG SIDDELEY Motors Ltd., Coventry, Eng.
BLACKBURN & General Aircraft, Ltd., London, W.1, Eng.
BRISTOL Aeroplane Co., Ltd., Filton House, Bristol, Eng.
de HAVILLAND Engine Co., Ltd., Leavesden, Herts., Eng.
D. NAPIER & Son, Ltd., Acton, London W.3, Eng.
ROLLS-ROYCE, Ltd., Aero Engine Div., Derby, Eng.

FRANCE

Societe HISPANO-Suiza, Bois-Colombes, France.
Societe Nationale d'Etude et de Construction de Moteurs d'Aviation (S.N.E.C.-M.A.), Paris, France.
Societe TURBOMECA, Bordes, France.

Hardened and Ground Parts are our Specialty

This king pin is truly king-size: 8" long and weighs about 12 lbs. We machined it out of No. 3140-2⅞" bar steel. After heat treating, bearing surface was given the specified fine finish-grind to 2½" dia., +.000 —.001.

Parts like this are our specialty —we've been making them exclusively for the automobile industry for more than 40 years. Each year has added to our knowledge and skill in precise machining, scientifically-controlled heat treating and micro-finish grinding. Let us show you what we can do with one of your tough jobs. Write or wire.

Henry W. Brown
PRESIDENT

Experienced production on:
King Pins • Wheel Studs
Shackle Bolts • Shackle Pins
Brake Anchor Bolts
Countershafts • Idler Shafts
Stub Axle Shafts
Steering Ball Bolts
5th-Wheel Rocker Shafts
Water Pump Shafts
... anything in the hardened and ground line, of any analysis steel, up to 4¼" diameter.

THE BROWN CORP.
213 BELLEVUE AVE. SYRACUSE, N. Y.
C. H. Ehlert, 3407 Clarendon Rd., Cleveland • R. F. Spring, 4716 Balfour Rd., Detroit • R. C. Sanderson, 2342 N. Cicero Ave., Chicago • Harry J. Windmiller, 1704 Carlton, Fort Worth • Lyle H. Johnson, 1355 Westwood Blvd., Los Angeles, Calif. • John B. Hunt, 8811 S.E. Yamhill St., Portland, Ore.

AUTOMOTIVE GASOLINE ENGINES

For details of their products see pages 210-221.

ALLIS-CHALMERS Mfg. Co., Buda Div., Harvey, Ill.
ARNOLT Corp., Warsaw, Ind.
BRENNAN Motor Mfg. Co., Syracuse 2, N. Y.
CHEVROLET Motor Div., General Motors Corp., Detroit 2, Mich.
CHRIS-CRAFT Corp., Algonac, Mich.
CHRYSLER Corp., Marine Engine Div., Detroit, Mich.
CLIMAX Engine & Pump Mfg. Co., Clinton, Iowa.
CONTINENTAL Motors Corp., Muskegon, Mich.
DEARBORN Marine Engines, Inc., Royal Oak 4, Mich.
DODGE Division, Chrysler Corp., Detroit 31, Mich.
FAGEOL Products Co., Subsidiary of Twin Coach Co., Kent, Ohio.
FORD Motor Co., Dearborn, Mich.
GMC Truck & Coach Div., General Motors Corp., Pontiac 11, Mich.
GRAY MARINE Motor Co., Detroit 7, Mich.
HALL-SCOTT Inc., Power Div., Berkeley 10, Calif.
HERCULES Motors Corp., Canton 2, Ohio.
INTERNATIONAL Harvester Co., Industrial Power Div., Melrose Park, Ill.
LATHROP Engine Co., Mystic, Conn.
LE ROI Div., Westinghouse Air Brake Co., Milwaukee 1, Wis.
MACK Trucks Inc., Somerville, New Jersey
MINNEAPOLIS-MOLINE Co., Minneapolis 1, Minn.
NORDBERG Mfg. Co., Milwaukee 7, Wis.
OLIVER Corp., Chicago, Ill.
OLIVER Corp., Plant #2, South Bend 21, Ind.
PALMER Engine Co., Cos Cob, Conn.
RED WING Marine Corp., Red Wing, Minn.
REO Motors, Inc., Subsidiary of Bohn Aluminum & Brass Corp., Lansing 20, Mich.
SCRIPP'S Motor Co., Detroit 8, Mich.
STERLING Engine Co., Div. of Sterling Precision Instrument Corp., Menominee, Mich.
STUDEBAKER Div., Studebaker-Packard Corp., South Bend 27, Ind.
UNIVERSAL Motor Co., Oshkosh, Wis.
WAUKESHA Motor Co., Waukesha, Wis.
WILLYS Motors, Inc., Toledo 1, Ohio.
WISCONSIN Motor Corp., Milwaukee 46, Wis.
WITTE Engine Works, Oil Well Supply Div., United States Steel Corp., Kansas City 26, Mo.

AUTOMOTIVE DIESEL ENGINES

For details of their products see pages 222-229.

ALLIS-CHALMERS, Buda Div., Harvey, Ill.
ATLAS, see White Diesel Engine Div., White Motor Co.
CATERPILLAR Tractor Co., Peoria, Ill.
CONTINENTAL Motors Corp., Muskegon 82, Mich.
CUMMINS Engine Co., Inc., Columbus, Ind.
Detroit Diesel Engine Div., General Motors Corp., Detroit 28, Mich.
DEUTZ, see Diesel Energy Corp.
Diesel Energy Corp., New York 5, N. Y.
FAGEOL-LEYLAND, see Twin Coach Co.
FAIRBANKS, MORSE & Co., Chicago 5, Ill.
GENERAL MOTORS, see Detroit Diesel Eng. Div.
GRAY MARINE Motor Co., Detroit 7, Mich.
HALLETT Diesel Engine Div., American M.A.R.C. Inc., Inglewood, Calif.

(Turn to page 344, please)

Write for Bulletin 75 C

MILESTONES IN POWER PROGRESS

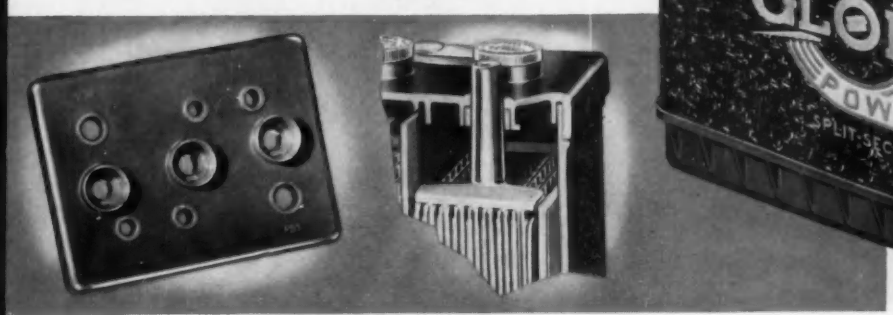
(NO. 2 IN A SERIES)

1904—First spark-plug ignition for 4-cylinder motor

1952—First practical one-piece battery cover introduced by GLOBE

The first spark plug ignition set for 4-cylinder engines was a fore-runner of today's complex ignition systems. Globe-Union's pioneering has continually developed batteries for these advanced systems. Typical of Globe's leadership is the one-piece battery cover introduced five years ago. Today one-piece covers are being used more and more to give —

1. **Extra battery capacity**
2. **Greater over-all container strength**
3. **Better looking batteries**



• Note unitized one-piece cover-case construction — brute for strength, less susceptible to damage in handling or distortion from extreme under-the-hood heat — resists vibration from road shock, protects vital battery parts — unharmed by oil and grease • Weld-sealed to case, having tongue and groove joint, triple sealed into one inseparable unit — cell partitions and container are strengthened, reinforced like a battleship to withstand heat and abuse • Another milestone in power — another first for Globe!

FASTER, LOW-COST DELIVERY!

Globe's sixteen plants are strategically located for fastest, lowest-cost shipments to all markets; thirteen (*) are producing creatively packaged dry-charged batteries.

*ATLANTA, GA., *DALLAS, TEXAS, *EMPORIA, KANSAS, *HOUSTON, TEXAS, *LOUISVILLE, KY., *MEDFORD, MASS., *MEMPHIS, TENN., *MILWAUKEE, WIS., *MINERAL RIDGE, OHIO, *PHILADELPHIA, PA., *REIDSVILLE, NO. CAROLINA, *SAN JOSE, CALIF., *HASTINGS-ON-HUDSON, N. Y., LOS ANGELES, CALIF., OREGON CITY, ORE., AJAX (ONTARIO) CANADA

SPINNING POWER
GLOBE-UNION
SPLIT-SECOND STARTING

GLOBE-UNION INC.

MILWAUKEE 1, WISCONSIN

If it's Petroleum-powered there's a GLOBE-BUILT BATTERY right from the start!

(Turn to page 344, please)

The Impossible doesn't take as long

Impossible to convert an automated transfer-feed line? Not even difficult when it's a Clearing Transflex line. In fact, the whole automated setup can be converted from producing one part to another *in about half an hour*. The Clearing automated line above is equipped with a feed where the fingers on the feed bars can be adjusted, or faster still, replaced with a different set of bars pre-set for the next job. The presses also have moving bolsters. Dies for the next run are set up outside the press while the presses are operating. When the run is completed, the new dies are powered into place at the touch of a button.

Think of it! An entire automated line ready to go on the next production run in about 30 minutes. That's not all. These presses are equipped

CLEARING PRESSES

CLEARING MACHINE CORPORATION *Division of U. S. INDUSTRIES, Inc.*

If it's Petroleum-powered there's a GLOBE-BUILT BATTERY right from the start!

One modification of the Transflex line shown in the large illustration offers the benefits of automated production at a relatively moderate cost. This line has the same basic removable feed mechanism as shown above adapted to medium capacity machines. Feeds may be wheeled anywhere in the shop to automate other press lines.

as you might think!

with removable feed units. Consequently, part of the press line can be operated manually by simply rolling the feed units—they're on wheels—to one side. The last press in the line shown above is on manual operation. The first three are being readied for an automated, hands-off setup. Yes, the impossible is standard operating procedure with a Clearing Transflex line.

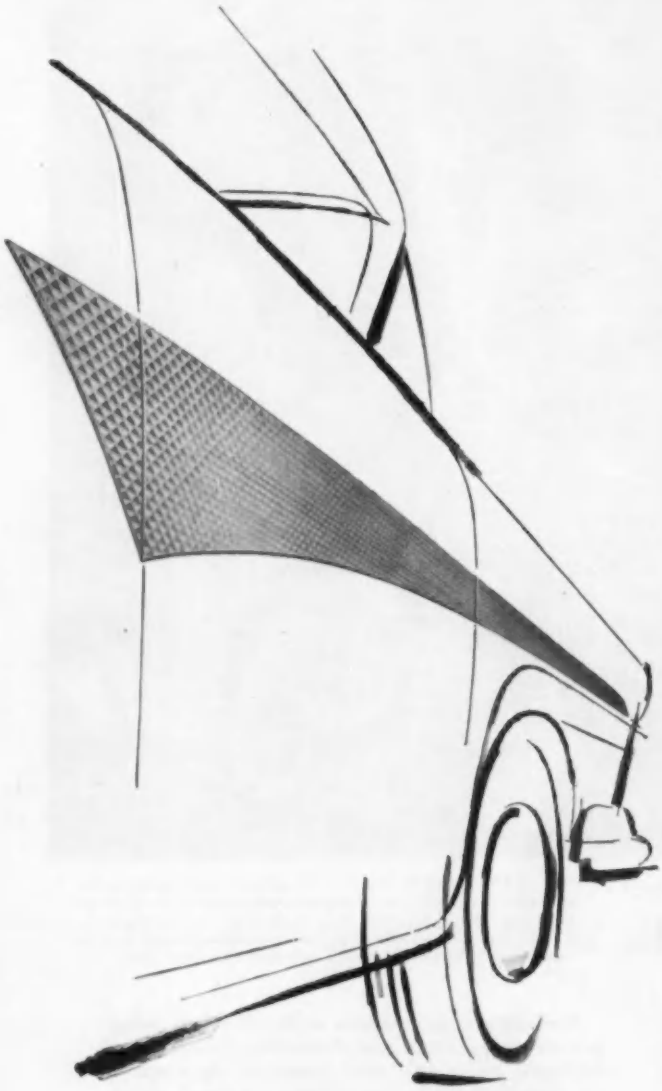
Here then is automation so flexible that even a job stamping shop with requirements for many different parts can plan to automate some of its stamping production. There are many different Transflex ideas that Clearing engineers can discuss with you. Get in touch with us. There'll be no obligation.

THE WAY TO EFFICIENT MASS PRODUCTION

6499 W. 65th Street • Chicago 38, Illinois • Hamilton Plant, Hamilton, Ohio

CMC CLEARING USI

From Hoosier-Cardinal: The appeal of TEXTURE



Auto makers have found a new way to bewitch the senses and enrich the spirit of car buyers. The device is trim of textured aluminum.

The rich and lovely sidesweep shown below is formed by Hoosier-Cardinal from Alcoa® Sheet which has been textured to Hoosier-Cardinal's own appealing pattern of tiny diamonds.

From Alcoa Aluminum, the metal of texture, Hoosier-Cardinal also fashions brilliantly glossed seat shields, satin-finished tail-light plates, engine-turned instrument panels, softly muted body ornaments of buffed gold. Never before has the sales-minded designer had placed before him a material of such versatility.

Practically all of these techniques for texturing aluminum have been developed by Alcoa and the expert interpreters of metal, like Hoosier-Cardinal, with whom we do business. Alcoa itself does not fabricate trim, but our facilities and engineers have always been available to provide their measure of inspiration and perspiration to our fabricators. The results of this teamwork will have their effect on the 1957 auto sales figures.

ALCOA ALUMINUM gives every 1957 car more **GLEAM AND GO**

Aluminum

is texture...

Alcoa® is aluminum

Aluminum can be the smoothest of mirrors, or a floor so coarse that no one will slip on it. It can brightly reflect 90% of a surgeon's light or smother a sunbeam on a sniper's rifle. Between the extremes of finishes that are infinite with aluminum, lies a world of textures for exciting design. Aluminum may be tumbled, burnished, sandblasted, scratch-brushed, hammered, buffed, etched, electro-brightened, embossed, coined, stamped, or textured by many other different ways. Alcoa's Process Development Laboratories have seldom seen a texture that aluminum will not take. It is equally true that most of the basic textures for aluminum have been pioneered or developed by Alcoa. Add texture to the list of reasons why aluminum is the designer's metal, and Alcoa your source of idea exchange.

Look forward with ALCOA

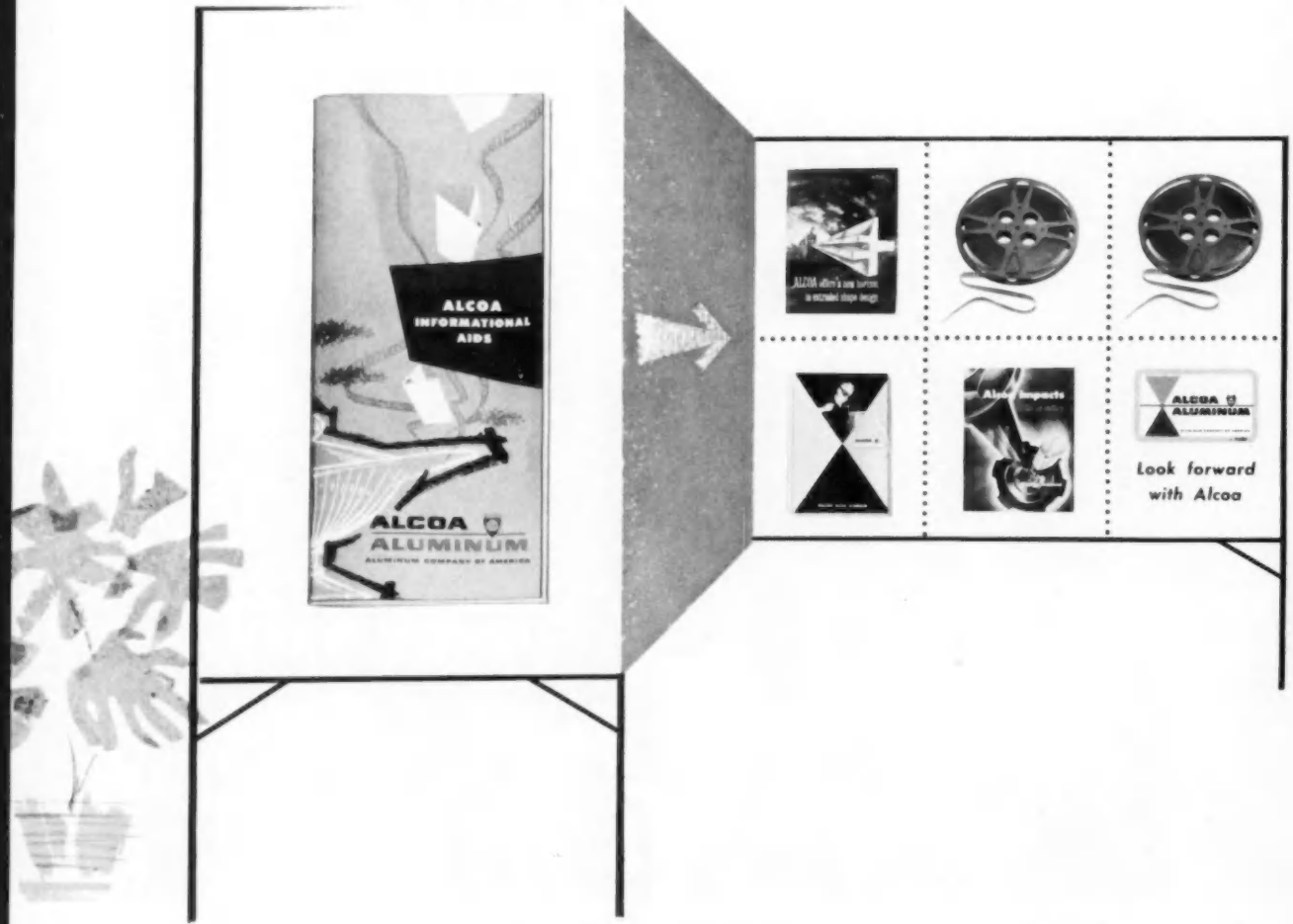
Learn more about designing in aluminum... this Alcoa Library index will help you

The fruits of 68 years of leadership in development, research and production at Alcoa have been capsuled for you in Alcoa's library of motion pictures and publications.

From the films and publications Alcoa makes available to you, you can check the ground rules for alloy selection. You can evaluate your designs in terms of fabrication methods: castings versus forgings; die castings versus sand, permanent mold or plaster castings; stampings versus machining, spinning or any other method . . . and aluminum can be fashioned by *every* method.

You can determine the best fastening or joining method . . . welding, brazing, soldering, riveting.

To make your selection of films and publications easier, just write Alcoa for your copy of *Alcoa Informational Aids* giving your company affiliation. ALUMINUM COMPANY OF AMERICA, 2195 Alcoa Building, Pittsburgh 19, Pennsylvania.



1904 TO 1957...1,000,000,000 VALVES

THE 1904 WINTON WAS FIRST

We recently produced our billionth valve.

But without your confidence in our ability to continually produce a better valve at less cost this record would not be possible.

We're grateful.

We want to say, "Thank you."

All of our people at the Valve Division will see that you continue to profit from our more than fifty years of experience in researching, designing and producing better valves.

And shouldn't we all be grateful for living in a country with an economy that needs all the horsepower generated by those millions of engines that required one billion valves!

F. C. Crawford

Chairman of the Board

J. W. Wright

President

Back of this valve . . .

One Billion Valves

and more than 50 years of know-how

A Winton automobile used the first engine valves that Thompson Products made . . . this was in 1904.

Valve Division engineers and metallurgists will continue to always be ready with improved valve designs and valve-train components, and with better valve alloys, to meet your new conditions of higher engine-compression ratios, combustion, temperatures, and fuel ratings.

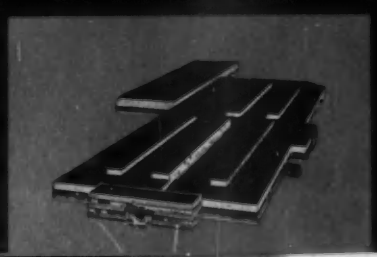
Only the Valve Division can base its engineering and production on the experience of producing 1,000,000,000 valves for all the leading manufacturers of every type of engine.

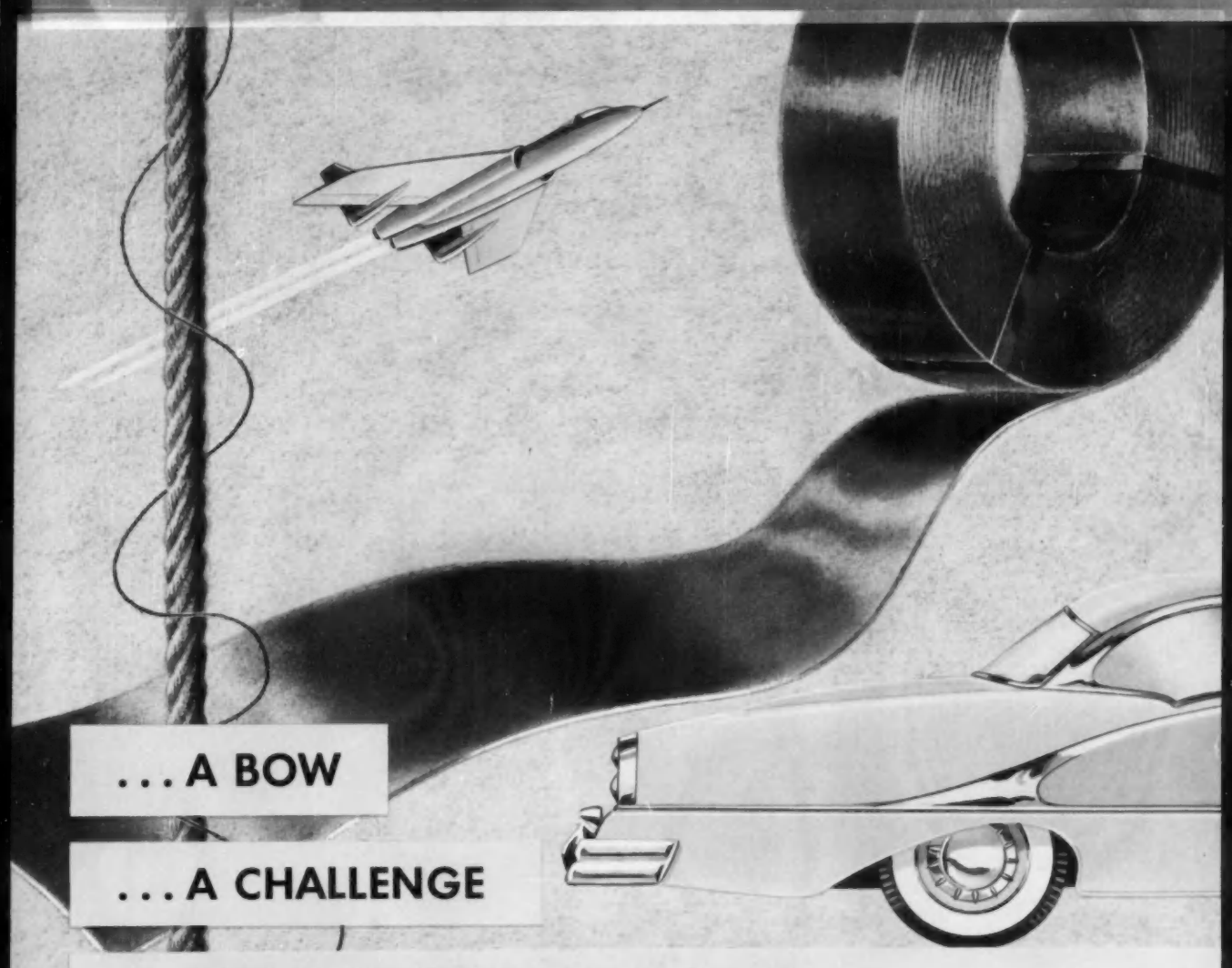
Valve Division ***Thompson Products, Inc.***

1455 EAST 185th STREET • CLEVELAND 10, OHIO

1,000,000,000 VALVES . . . MORE THAN 50 YEARS' EXPERIENCE

The Valve Division's new plant complete facilities for all your valve requirements under one roof.

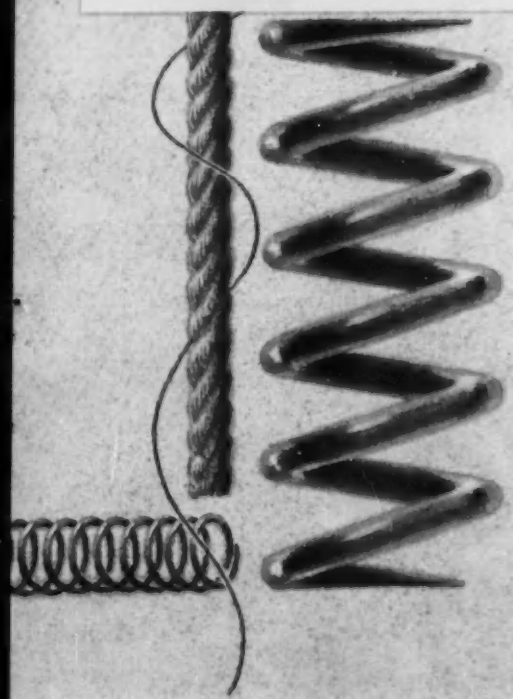




. . . A BOW

. . . A CHALLENGE

. . . AND A PROMISE OF SUCCESS

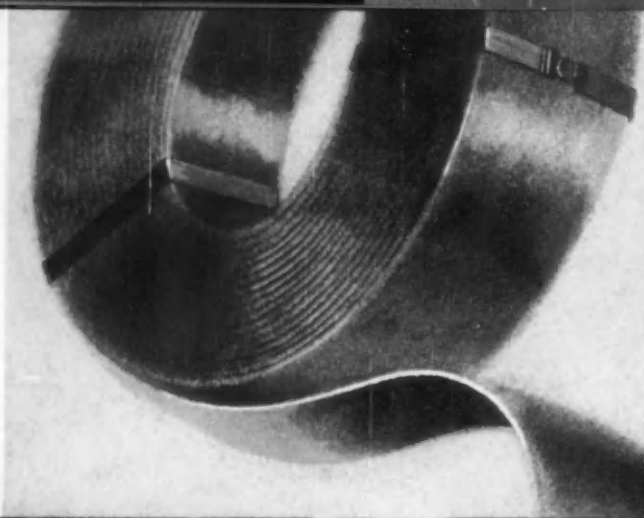


Over the years the automotive industry has made almost unbelievable production advances. Today automobile men face the interesting prospect of setting even more outstanding records in the future.

It will be done. Because no industry is more sensitive to the desires of the public. No industry is more willing to *meet* those desires—with sparkling new designs, better safety features, effortless automatic controls and all the other improvements that tickle the public fancy.

And automotive *suppliers* like American Steel & Wire are always ready to work with you to supply better steels—packaged so they will be most useful—and assist in developing better ways to fabricate them.

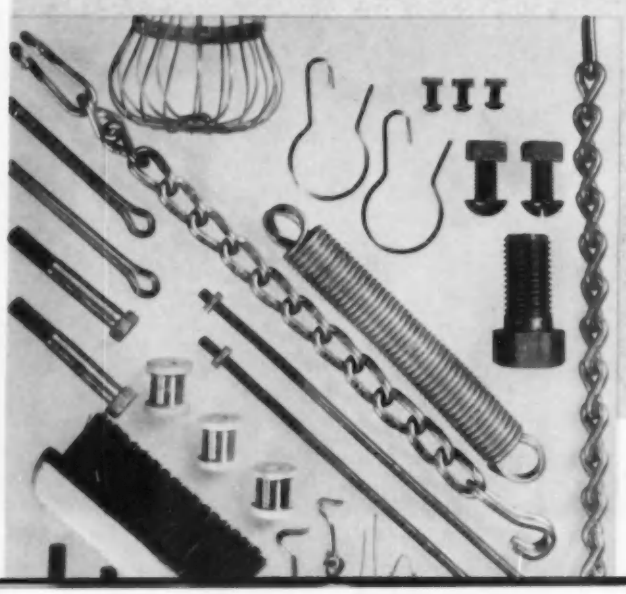
Just call your American Steel & Wire representative.

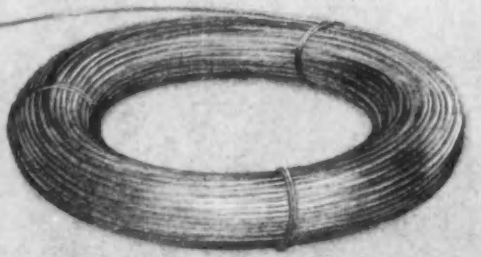


STRIP

American Steel & Wire supplies a complete range of strip steels, carbon, alloy or Stainless, in the widest range of types and finishes.

FOR FINEST QUALITY AND SERVICE,





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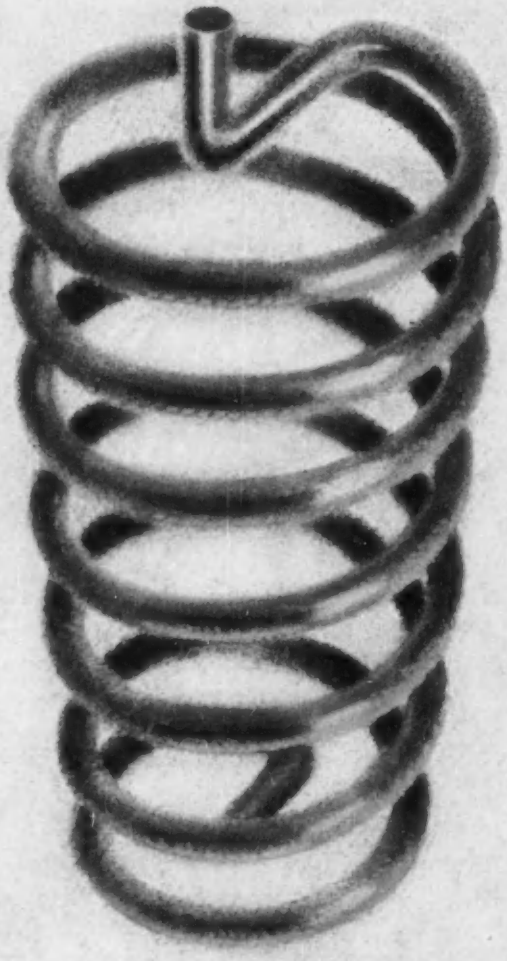
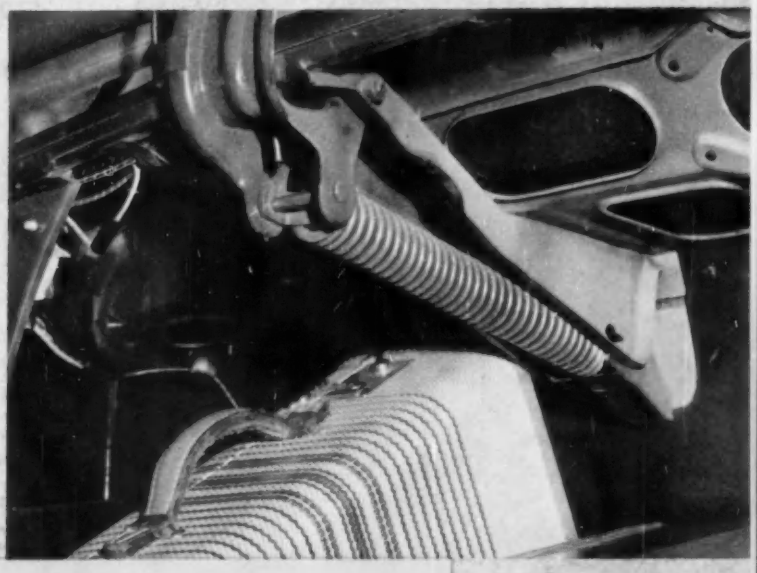
Since it is the very foundation of our business, USS Manufacturers Wire has become famous for consistent high quality. Every conceivable type, size and finish is available.



SPRINGS

American Quality Springs have been thoroughly proved in all types of service. Skilled spring engineers are ready to help with basic designs, to help reduce costs.



SPECIFY THESE **AS&W** PRODUCTS

STRAND

American Steel & Wire manufactures steel strand in several different grades, strengths and finishes to meet the varied requirements of its many applications.

For in-plant use, these AS&W products help cut costs and raise production efficiency

TIGER BRAND WIRE ROPE

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UNITED STATES STEEL

SHORTIES

In 1947, one major aircraft manufacturer determined that a manpower nucleus of 15,000 engineering and production personnel was required merely to preserve a know-how of designing and building a modern bomber. Today, because of the greatly increased complexity of modern bomber planes, the manpower nucleus now required has risen to 23,000.

•

One large steel-producing company burns enough petroleum fuel in one year to heat a five-room house for 380 centuries.

•

The energy obtained yearly from crude oil and natural gas is the equivalent of the work of 33 servants for every man, woman, and child in the nation.

•

During the next 13 years, more money will be spent for highway construction on the Federal-aid system alone than has been spent during the last 26 years on all Federal, state, local and city streets.

•

About six million of the cars and more than a million of the trucks in the nation are more than 13 years old.

•

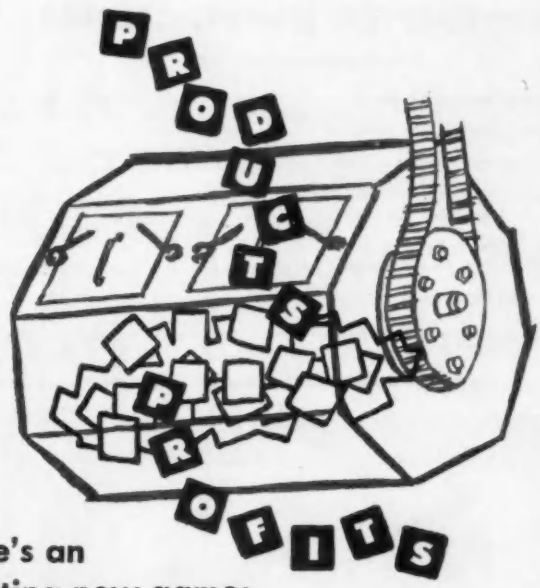
The practice of parking cars outdoors is more common in large U. S. cities (58 per cent) than metropolitan suburbs (43 per cent). Sixty-three per cent of the cars on farms are provided with shelter.

•

About four million passenger cars and half a million trucks and buses are retired annually. This is about twice the prewar scrappage rate.

•

A large modern air transport carries enough fuel on one flight to furnish a passenger automobile with gasoline sufficient to drive more than 165,000 miles.



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One of the greatest money-saving opportunities in metalworking lies in the use of barrels to finish parts by the hundreds in place of conventional methods that finish one part at a time.

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One Oakite customer changed to barrel methods to deburr curved stainless steel strips that are 14 inches long. The cost for deburring 20,000 strips was reduced from $3,000 to $125.00.

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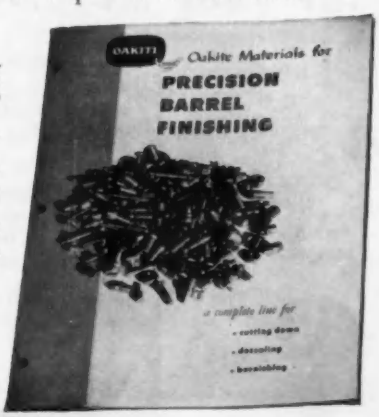

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DIRECTORY OF MANUFACTURERS

(*Continued from page 328*)

AUTOMOTIVE DIESEL ENGINES (cont'd)

Harnischfeger Corp., Diesel Div., Crystal Lake, Ill.
HERCULES Motors Corp., Canton 2, Ohio.
HILL Diesel Engine Div., Berry-Hill Corp., Providence 5, R. I.
INTERNATIONAL Harvester Co., Chicago 1, Ill.
MACK Mfg. Corp., New York 1, N. Y.
MINNEAPOLIS-MOLINE Co., Minneapolis 1, Minn.
MURPHY Diesel Co., Milwaukee 14, Wis.
OLIVER Corp., Charles City, Iowa.
OLIVER Corp., Plant No. 2, South Bend 21, Ind.
OLIVER Corp., Chicago, Ill.
D. W. ONAN and Sons, Inc., Minneapolis 14, Minn.
P&H, see Harnischfeger Corp. Diesel Div.
RED WING Marine Corp., Red Wing, Minn.
SCRIPPS Motor Co., Detroit 8, Mich.
R. H. SHEPPARD Co., Inc., Hanover, Pa.
STERLING Engine Co., Inc., Buffalo 13, N. Y.
SUPERIOR, see White Diesel Engine Div., White Motor Co.
Twin Coach Co., Kent, Ohio.
WAUKESHA Motor Co., Waukesha, Wis.
WHITE Diesel Engine Div., White Motor Co., Springfield 99, Ohio.
WITTE Engine Works, Oil Well Supply Div., United States Steel Corp., Kansas City 26, Mo.

U. S. SMALL GASOLINE ENGINES

For details of their products see pages 230-231.

BRIGGS & STRATTON Corp., Milwaukee 1, Wis.
CLINTON Machine Co., Maquoketa, Iowa.
CONTINENTAL Motors Corp., Detroit 14, Mich.
CUSHMAN Motor Works, Lincoln 1, Neb.
GLADDEN Products Corp., Glendale 4, Calif.
GRAVELY Tractors, Inc., Dunbar, W. Va.
HOMELITE Div., Textron American, Inc., Port Chester, N. Y.
JACOBSEN Mfg. Co., Racine, Wis.
KOHLER Co., Kohler, Wis.
LAUSON Engine Div., Tecumseh Products Co., New Holstein, Wis.
McCULLOCH Motors Corp., Los Angeles 45, Calif.
D. W. ONAN & Sons, Inc., Minneapolis 14, Minn.
POWER PRODUCTS Corp., Grafton, Wis.
REO Div., Motor Wheel Corp., Lansing 3, Mich.
UNIVERSAL Motor Co., Oshkosh, Wis.
WEST BEND Aluminum Co., Hartford Div., Hartford, Wis.
WISCONSIN Motor Corp., Milwaukee 46, Wis.

U. S. OUTBOARD MOTORS

For details of their products see pages 232-233.

BUCCANEER, see Gale Products Div., Outboard Marine & Mfg. Co.
CHAMPION Motors Co., Minneapolis 13, Minn.
ELGIN, see West Bend Aluminum Co., Hartford Div.
EVINRUDE Motors Div., Outboard Marine & Mfg. Co., Milwaukee 16, Wis.
FAGEOL Products Co., Marine Div., Kent, Ohio.
FLAMBEAU, see Metal Products Corp.
JOHNSON Motors Div., Outboard Marine Corp., Waukegan, Ill.
GALE Products Div., Outboard Marine & Mfg. Co., Galesburg, Ill.
Kiekhaefer Corp., Fond du Lac, Wis.
MERCURY, see Kiehaefer Corp.
Metal Products Corp., Milwaukee 12, Wis.
Muncie Gear Works, Inc., Muncie, Ind.
NEPTUNE, see Muncie Gear Works, Inc.
OLIVER Outboard Motors, Div., Oliver Corp., Battle Creek, Mich.
SCOTT-ATWATER Mfg. Co., Inc., Minneapolis 13, Minn.
WEST BEND Aluminum Co., Hartford Div., Hartford, Wis.

DIESEL ENGINES FOR DIESEL-ELECTRIC LOCOMOTIVES

For details of their products see page 233.

ALCO Products, Inc., Schenectady 5, N. Y.
COOPER-BESSEMER Corp., Mt. Vernon, Ohio.
ELECTRO-MOTIVE Div., General Motors Corp., La Grange, Ill.
FAIRBANKS, MORSE & Co., Chicago 5, Ill.

Explosion-proof vacuum unit.

Thoroughbred Fractional HORSEPOWER for your motor-driven products

Aircraft windshield wiper motor.

A rugged high-torque, high-speed motor.

The unexcelled performance of Lamb Electric Motors in many types of industrial, commercial and domestic products is evidence of their outstanding quality.

Dependability and efficiency (optimum weight-size-horsepower ratio) are features that result from proper design and careful manufacture by personnel having many years of experience in the small motor field.

May we demonstrate how Lamb Electric Motors can bring these advantages — and also perhaps lower costs — to your products?

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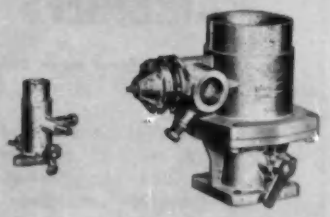

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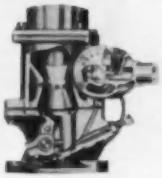
the most complete line

OF **LP-GAS** CARBURETION EQUIPMENT...



V-1401 Carburetor

S-1403 Carburetor

1600 Series Hose Adapter

1600 Series Adapter-Mixer

E-3 Carburetor

1575E Converter

1900E Converter

670 Filter

ALGAS dependability and economy have been proven in thousands of applications. Whether it's a tiny carburetor for a small single or multiple cylinder engine, for use in truck refrigeration units or a giant sized carburetor for use on large industrial engines, ALGAS can meet every requirement. In an ever increasing number of new and different applications you will find ALGAS LP-Gas carburetion systems proving their superiority again and again. Whenever you think of LP-Gas think of ALGAS and you'll choose the best.

ALGAS Also Engineers and Manufactures LP-Gas Plant Equipment. For industrial stand-by use, peak-load shaving or municipal use, ALGAS LP-Gas plant equipment is specifically engineered, manufactured and installed to meet any load requirement from one thousand to several hundred thousand gallons capacity. ALGAS also offers a complete line of LP-Gas Vaporizers, Vaporizer-Mixers or Mixers only for use by industry and utilities. *In Europe see: Campagnie General de Construction de Fours– Paris, France.*

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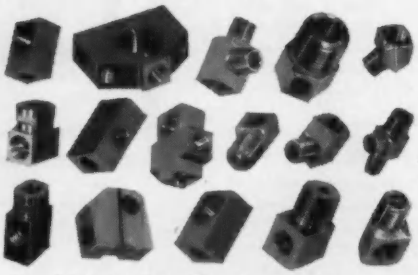

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AIRBRIEFS

(*Continued from page* 306)

new activities in the fields of electronics, infra-red research, fire control systems and other developments and manufacturing activities.

Air Associates will be retained as a division for handling aviation supplies. Electronic Communications, Inc., will continue electronic research and production at its Orange, N. J., plant. Expansion of facilities includes a new laboratory under construction in Baltimore, Md., and a projected manufacturing plant on a 75-acre site in St. Petersburg, Fla.

Plenty of Jet Flying

Jet fighters produced (7600 of them) by Republic Aviation Corp. of Farmingdale, N. Y., have logged a total of 3.5 million hours of flying time. These F-84 Thunderjet, Thunderstreak and Thunderflash airplanes have consumed an estimated 1,100,000,000 gallons of fuel.

The F-84 jets are used in operations by 13 North Atlantic Treaty Organization nations including the United States, England, Germany, France, Belgium, The Netherlands, Norway, Denmark, Italy, Greece, Turkey, Portugal, Yugoslavia, Formosa and Japan.

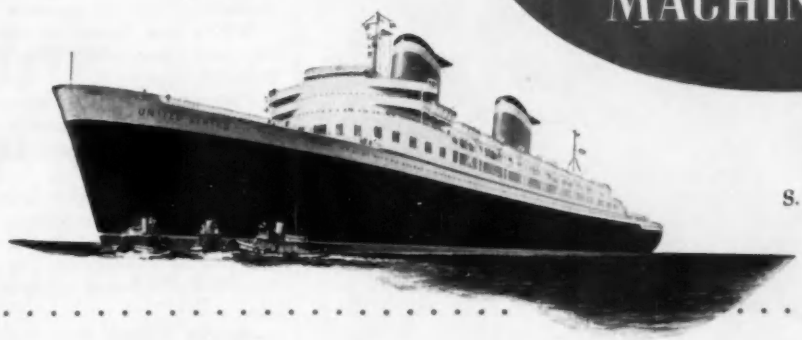
Remote Positioner Operates on 60 Cycle Power

Lear, Inc., of Grand Rapids, Mich., has developed a remote positioner for industrial applications. Called the "Electrolink," the device operates on 60 cycle 110 volt a-c power and offers rapid response with high torque output and accuracy to within ½ of one degree.

Originally developed for 400 cycle operation, the new 60 cycle version weighs only 16 lb and consists of three basic components. A data link which converts manually positioned input into error voltage; an amplifier, which processes the error signal and energizes the third component, a servo drive which supplies a power output. The Electrolink has already been used in such applications as remote control of jet engine testing and for control of machine tools used to machine radioactive metals. It is a promising device for use in fields of material handling, processing, packaging and other types of automatic operations.

The PRECISION GEARS which Drive these Great Ships were Finished on . . . . . .

RED RING HORIZONTAL SHAVING MACHINES



S. S. United States

U. S. S. Nautilus

Courtesy, General Dynamics Corporation

U. S. S. Forrestal

Red Ring horizontal rotary shaving machines were used by Westinghouse Electric Corporation to finish the main propulsion gears of these great ships and many others.

Rotary Shaving assures precision in external and internal gears of all sizes. Write for information on your gear problems.

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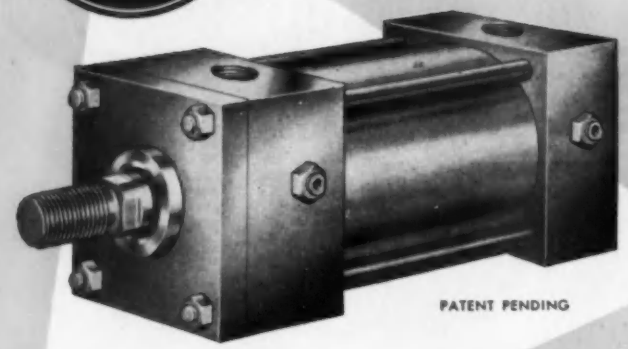
FOR AUTOMATION

SP CYLINDERS



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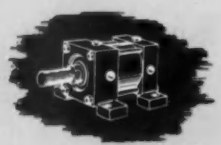
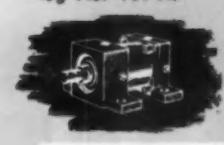
top performance–longest life

All S-P cylinders are engineered throughout for high speed, efficient operation. Piston rods are heat treated and hard chrome plated to resist scoring. Bronze cartridges with extra long bearing surfaces are easily removable for quick servicing of rod seals and wipers. End plates are rolled steel. All S-P cylinders are built to JIC standards.

S-P STANDARD AIR CYLINDERS have brass tubes to eliminate corrosion. Cushions float on O-rings for maximum cushioning. Eleven bore sizes, 1½" – 14". 21 mounting types. Readily modified for oil or water. Send for Catalog No. 110.

S-P HEAVY DUTY AIR CYLINDERS for automation and other severe applications. Double porting for extreme high speeds. Heavy wall seamless steel tube. Nine bore sizes, 1½" – 8". Five mounting types. Approved and used by two major automobile manufacturers. Send for Catalog No. 109-A.





S-P HIGH PRESSURE HYDRAULIC CYLINDERS have seamless steel tube. Special locking mechanism eliminates tie rods. Designed for 2,000 psi. Eleven models in 11 sizes. Send for Catalog No. 104.

Step up production with S-P cylinders. Representatives in principal cities. Prompt deliveries. Order catalog by number shown above. The S-P Manufacturing Corporation, 30201 Aurora Rd., Solon, Ohio. *In greater Cleveland.*

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POWER CHUCKS • COLLET AND DRILL PRESS CHUCKS • AIR PISTONS, VALVES, ACCESSORIES

1957 GMC Trucks

(*Continued from page* 156)

The newest engines in GMC's heavy-duty line power the air suspension tractors. Four have the all-new 370 cu-in. V-8 developing 232 hp; two the 6-71 Diesel rated at 220 hp; two the new 4-71T turbo-charged diesel Engine; and two the new 6-71SE (Super-Economy) six-cylinder Diesel developing 190 hp (gross).

GMC's new line-up of engines for its 1957 heavy-duty trucks is as follows:

Two new V-8s, the one mentioned above and another powerplant with 347 cu.-in. displacement and a 206 hp rating.

Two turbo-charged Diesels, the four-cylinder unit powering the new air suspension models and a six-cylinder engine developing 236 hp, are available in various heavy-duty models.

Besides having turbo-chargers the Diesels also boast hydraulically-driven fans that are an exclusive feature of all GMC Diesel engines for 1957. These fans are automatically regulated to run only when engine cooling is required and stop or slow down when cooling is unneeded. This reduces parasitic power drain-off and increases usable horsepower.

GMC's Super-Economy Diesel, a 302 cu.-in, six-cylinder gas engine developing 160 hp, and a four-cylinder Diesel achieving 150 hp, complete the list.

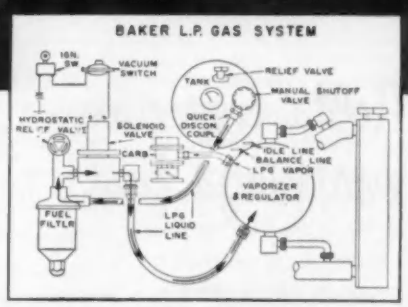
A large selection of GMC models, including the air suspension units mentioned previously, are designed for operation on or off the highway.

Basic models in the heavy-duty bracket have gross vehicle weights ranging from 22,000 to 59,000 lb and gross combination weights from 38,000 to 90,000 lb. They are available with improved transmissions and axles for every type of hauling operation. Many models have optional heavy-duty front and rear axles for specialized needs. Cab-over-engine models have been designed to provide compact units with short bumper-to-back-of-cab dimensions.

Specialized chassis, such as two separate ones for school bus use and another for fire truck bodies, are embodied in the heavy-duty truck line. Many engineering and design advances highlight the new models.

New 5-speed transmissions, the latest auxiliary transmissions, and new two-speed axles, are some of the additional features which stud this year's line of heavy-duty "Do-Everything" GMC trucks.

BAKER *offers LP gas fork trucks in 2000 to 7000 lb. capacities*



Arrows trace the flow of LP gas from the tank through the filter to the vaporizer and regulator before it enters the engine. The hydrostatic relief valve opens the system before dangerous pressure is reached in event of high ambient temperature changes. Automatic fuel shut-off is provided by solenoid valve and vacuum switches when engine stops. For maximum efficiency, the vaporizer preheats the LP gas before it passes to the regulator and the regulator reduces the pressure before the gas enters the carburetor.

The complete Baker line includes the BAKER LP gas fork trucks for those desiring the cost savings, cleaner operation, and other advantages provided by liquefied petroleum gas.

The Baker LP gas truck is powered by an engine specially designed for LP gas, not just a conversion unit. The special LP engine is provided with high compression head for maximum efficiency. Among the features are a special cold manifold and hot thermostat for cooler operation. Stellite-faced exhaust valves and solid Stellite inserts assure greater dependability and longer life. Complete vaporization and more efficient combustion mean lower oil consumption, less down time and reduced maintenance costs due to minimum cylinder wear. Fuel tank conveniently located behind the driver can be removed and full tank installed in less than a minute.

Write for information.

Baker industrial trucks

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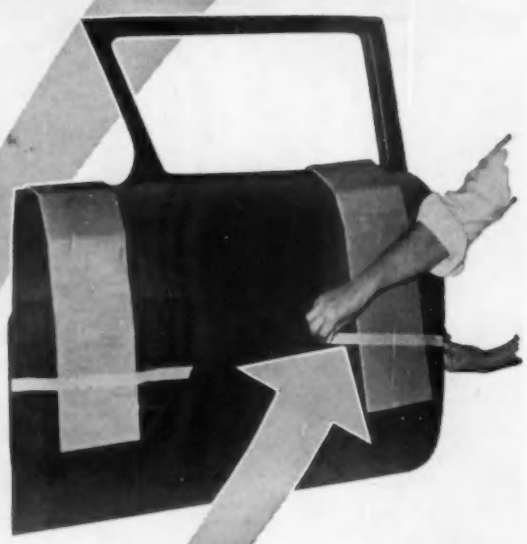

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Shuford's SHURTAPE is a pressure-sensitive paper tape with rubber impregnated flatback or crepe paper backing, highly resistant to abrasion, water, oil and solvents. Use it to hold protective wrappings in place on parts and accessories in transit and in storage.

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Shuford Mills, INC. SINCE 1880
HICKORY, N. C.

World's largest manufacturer of cotton cordage

Submerged Fuel Pumps

(*Continued from page* 314)

mercial fuel whose vapor-forming tendency was gradually increased by stepwise additions of butane. When vapor lock occurred the vapor pressure of the blend in use was considered to be the limit of the pump. Some of the pumps had a capacity which exceeded the highest vapor pressure of any practical blend which could be used on the 100F day.

This study has shown that these pumps will keep a car operating smoothly at under-hood temperatures as much as 20 to 40F higher than with current engine-mounted pumps. This corresponds to an increase of 3 to 4 lb R. V. P. in the vapor pressure limit of the gasoline as shown, Fig. 2.

In the cases where vapor lock was experienced, the restricting formation of vapor occurred at the pump inlet for the conventional diaphragm pumps; for the submerged pumps the restriction occurred at the fuel filter placed on the engine compartment firewall just ahead of the carburetor. Those submerged pumps eventually vapor locked failed because they were no longer able to supply sufficient pressure with the higher vapor pressure fuels to force the fuel past this restriction.

The superior performance of the submerged pumps is due primarily to the more favorable temperature conditions existing at the pump inlet, temperatures being as much as 65°F. lower. Carburetor bowl temperature reached a maximum of 195°F. This is high enough to cause boiling in the carburetor with present-day fuels and explains why occasionally a car will be difficult to restart when hot. The temperatures shown are the maximums following the soak period. However, for steady-load turnpike driving, 60 mph, temperatures in the fuel system are in the 120-130°F. range. This explains why vapor lock usually does not occur until the engine is idled, or shutdown, following a high-speed run or pulling a grade. Typical temperatures which were measured in the two cars are shown in Fig. 3.

Increasing vapor pressure means increased yields, octane numbers and profits to the petroleum industry but it also brings serious problems to the automobile industry. Submerged fuel pumps appear to be one small step in the direction of designing the car so that higher vapor pressure fuels can be used. However, other problems, such as vapor loss of fuel from the car tank, safety, and a number of design difficulties remain. Progress, therefore, will be gradual.

In the Spectacular PLYMOUTH ENGINE PLANT you see

(Above) View of Plymouth Engine assembly line

VICKERS® HYDRAULICS

Wherever You Look

Plymouth Engine Plant is 980' long and 500' wide. Indicative of its scope is crankshaft machining requiring 4500 linear feet of automation composed of 385 individual units. Plant capacity is 150 engines per hour.

In the new Plymouth "Qualimatic" Engine plant you see Vickers Hydraulics on every side. Hundreds of machines in this latest and greatest example of automation are Vickers equipped.

Both builders and users of production equipment appreciate the significant advantages of Vickers Hydraulics . . . advantages that help produce better products at lower cost.

A specific need in the Engine Plant is standardization on a few basic hydraulic units to keep down parts inventories. The Vickers line makes standardization easy. Also desirable are hydraulics in units quickly demountable . . . so that by replacing units, repairs on the job are avoided and costly downtime reduced. Vickers has extensively developed demountable unit construction.

Whether automated or not, more and more plants have more and more Vickers Hydraulics. For further information, write for Catalog 5002B.

VICKERS HYDRAULICS is used on machines supplied by these Companies to Plymouth Engine Plant

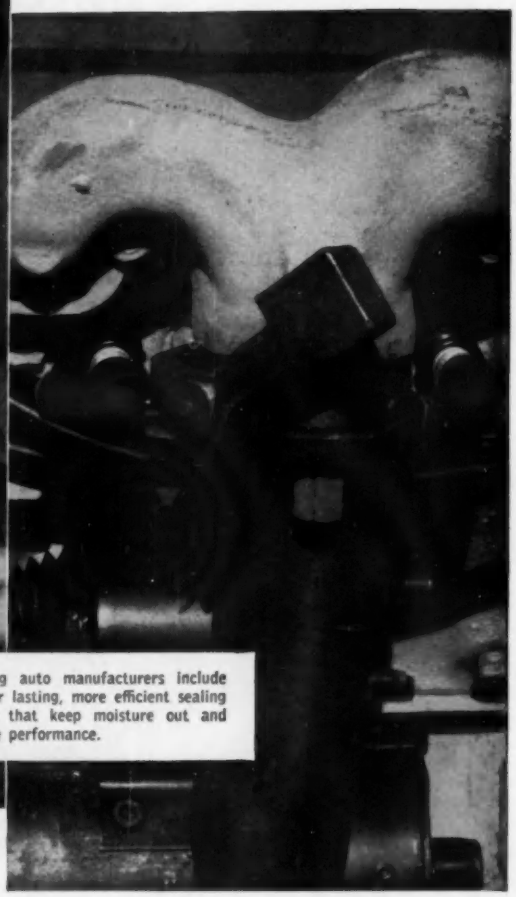
American Broach & Machine Co.
Barnes Drill Company
Bilt-Rite Tool & Machine Co.
Buhr Machine Tool Company
Colonial Broach & Machine Co.
Crankshaft Machine Company
The Cross Company
Ex-Cell-O Corporation
Fitchburg Engineering Corp.
Greenlee Bros. & Company
Industrial Metal Products
The LaPointe Machine Tool Co.
Landis Tool Company
The R. K. LeBlond Machine Tool Co.
Leas-Brodner Company
Michigan Drill Head Co.
Micromatic Hone Corporation
Micro-Poise Engineering & Sales Co.
Modern Industrial Engineering Co.
The Motch & Merryweather Machinery Co.
Norton Company
A. P. Schraner Co.
The Sheffield Corporation
Snyder Tool & Engineering Co.
Sundstrand Machine Tool Co.
Jarvis B. Webb Co.
The Wickes Corp.
Wilson Automation Co.

VICKERS INCORPORATED
DIVISION OF SPERRY RAND CORPORATION
ADMINISTRATIVE and ENGINEERING CENTER
Department 1428 • Detroit 32, Michigan

Application Engineering Offices: • ATLANTA • CHICAGO • CINCINNATI • CLEVELAND DETROIT • GRAND RAPIDS • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS NEW YORK AREA (Summit, N.J.) • PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) • PORTLAND, ORE. • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS • TULSA • WASHINGTON • WORCESTER
IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto

7545

ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921



Typical Silastic applications by leading auto manufacturers include transmission oil seals that provide longer lasting, more efficient sealing against hot oil; and sparkplug covers that keep moisture out and withstand heat to produce better engine performance.

SILASTIC molded parts seal oil in, moisture out

SILICONE RUBBER

Molded parts of Silastic*, Dow Corning's silicone rubber, show little or no change in physical or dielectric properties after long exposure to temperature extremes which would quickly ruin organic rubber. Leading rubber companies fabricate Silastic molded parts in practically any color, size or shape.

Get latest data on Silastic

Mail coupon today

Dow Corning Corporation, Dept. 1015
Midland, Michigan
Please send me latest data on Silastic

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

*T.M. REG. U.S. PAT. OFF.

Typical Properties of Silastic for Molded Parts

• Temperature Range, °F	—130 to 500
• Tensile strength, psi	600 to 900
• Elongation, %	150 to 300
• Compression set, %, @ 300 F	15 to 40
• Hardness range, durometer	20 to 90
• Dielectric strength, volts/mil	400 to 500
• Oil resistance	Dependent on type of oil

If you consider ALL the properties of a silicone rubber, you'll specify SILASTIC.

first in silicones — DOW CORNING SILICONES

DOW CORNING CORPORATION • MIDLAND, MICHIGAN

More Government Contract Awards

THIS latest list of Government prime contracts that have been awarded covers the period from January 30 to February 25, 1957. Items included in this list are for various types of automotive military equipment, including tanks, motorized gun carriages, trucks, airplanes, automotive components and spare parts, automotive maintenance equipment, etc.

AVCO MFG. CORP., Crosley Div., Cincinnati, Ohio
Type MD-9 fire control system, bomber flexible tail defense—$2,500,000

AVCO MFG. CORP., Lycoming Div., Williamsport, Pa.
O-435-23A aircraft engines—$896,535
Spare parts—4200 ea.—$48,488
R-1300-3B aircraft engine, for H19A aircraft—$205,056

AIRESEARCH MFG. CO., Garrett Corp., Los Angeles, Calif.
Oil cooler assys.—various—$37,823
Air-turbine starters & valve controls—various—$244,720
Actuator assy. to support F86 aircraft $92,740
Regulator air press shutoff—12 items—$58,461
Cooler assy. fuel oil—4 items—$100,973
Services and materials to overhaul and repair compressors and valves—various—$208,580

AIRESEARCH MFG. CO., Garrett Corp., Phoenix, Ariz.
Spare parts for power units—various—$1,658,585
Regulator air pressure—17 items—$157,809
Services to recondition and reassemble GH-4 heater assy.—91 ea.—$432,250

AMERICAN BOSCH ARMA CORP., Arma Div., Garden City, Long Island, N. Y.
MD-9 bomber fire control system for B-52—$2,500,000

AMERICAN LaFRANCE CORP., Elmira, N. Y.
Spare parts—780 ea.—$55,203

BAKER-RAULANG CO., Cleveland, Ohio
Truck, fork lift, 10,000 lb. cap.—2 ea.—$46,448
Trucks, industrial, gasoline 2000 and 4000 lb. cap.—152 ea.—$322,921

BELL AIRCRAFT CORP., Ft. Worth, Tex.
Parts for HTL spares—various—$58,408

BENDIX AVIATION CORP., Bendix Products Div., South Bend, Ind.
Wheel assemblies, 30x8.8, for F-106A and B aircraft; brake assemblies, 12¾", 4 rotor—$558,678
Maintenance parts for various aircraft—various—$216,531
Parts used on assys. for various engines—various—$54,432
Pump assys., primer assys., and carburetors—various—$375,780
Cylinder assy., air power brake unit—2832 ea.—$108,962
Main brake assys., for F-100D aircraft—$495,036
Modification kits, for F-100 aircraft brakes—$1,985,802

BENDIX AVIATION CORP., Eclipse-Pioneer Div., Teterboro, N. J.
Lever & shaft assys.—various—$64,962
Computer, converter, compensator, central air data, used on F101 and F105 a/c—$6,736,102

BENDIX AVIATION CORP., Red Bank Div., Eatontown, N. J.
Generators, 30-v, installations for F-105B; panels, protection, dc, type MD-1; generators, 30-v, type MA-11 (spares)—$315,908
Generators, aircraft, engine - driven, 30-v, for H34A—$60,294
Generators, 20 kva, ac, 3-phase; panels, control; regulators, voltage, for F-104 aircraft—$3,275,220

BENDIX AVIATION CORP., Scintilla Div., Sidney, N. Y.
Shafts, flanges, screws—various—$111,472
Services & materials to support magnetos & converters—various—$110,037
Magneto assys.—various—$79,374
Magneto, auxiliary engine assy.—1153 ea.—$41,393
Magneto parts—various—$51,307

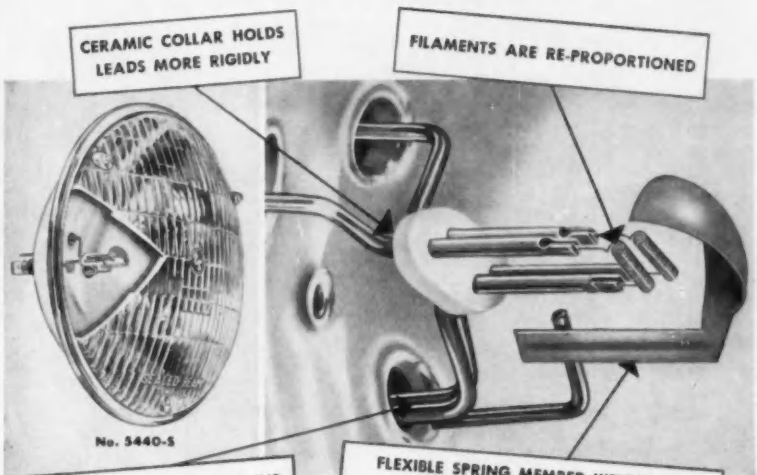
BENDIX AVIATION CORP., Utica Div., Utica, N. Y.
Starters—various—$322,282
Services & materials for pump assys.—various—$89,587
Repair and mod. of Bendix 36E26 starters—$299,738

BOEING AIRPLANE CO., Seattle, Wash.
Facilities for production of B-52 aircraft—$6,879,500

BOEING AIRPLANE CO., Wichita, Kans.
Facilities for production of B-52 aircraft—$10,901,455

(*Turn to page 354, please*)

THE MOST RUGGED TRUCK AND BUS HEADLAMP EVER BUILT!


CERAMIC COLLAR HOLDS LEADS MORE RIGIDLY
FILAMENTS ARE RE-PROPORTIONED
No. 5440-S
EXCLUSIVE SPOT WELD JOINS TWO LEAD WIRES TOGETHER
FLEXIBLE SPRING MEMBER WELDED TO SPECIAL SUPPORT, SHOCK-MOUNTS FOG CAP TO LESSEN FILAMENT VIBRATION

The Tung-Sol Vision-Aid Truck Headlamp, long recognized for meeting the toughest service conditions, is now more durable than ever before. This new ruggedness is produced by spot welding two of the lead wires together (an exclusive Tung-Sol feature) and by use of a ceramic collar which stiffens the entire filament structure. Also, the filaments themselves have been re-proportioned—thus making the filaments less receptive to vibration and shock. Flexible anti-shock spring member welded to special support isolates fog cap from filament structure.

Exhaustive laboratory impact tests clearly reveal that this new lamp will stand more abuse than any previous headlamp.

In addition to durability, improved vision in bad weather is provided by the fog cap, and quick day or night aiming is made possible by the E-Z Aim Platforms. Drivers, equipment and cargoes are safer at night behind Tung-Sol Vision-Aid Headlamps, and they cut lamp replacement costs in the bargain.

TUNG-SOL ELECTRIC INC.
Newark 4, N. J.

Sales Offices: Atlanta, Ga.; Columbus, Ohio; Culver City, Calif.; Dallas, Texas; Denver, Colo.; Detroit, Mich.; Irvington, N. J.; Melrose Park, Ill.; Newark, N. J.; Philadelphia, Pa.; Seattle, Wash. Canada: Montreal, P. Q.

TUNG-SOL®
No. 5440-S RUGGEDIZED
VISION-AID HEADLAMPS
WITH E-Z AIM PLATFORMS

These are the basic elements necessary to design and produce a precision built spring. To supply the above elements takes skill, experience and imagination . . . ingredients that Accurate Spring provides every one of their customers every day.

Accurate makes millions of springs a month—precision springs held to close tolerances by rigid quality control and inspection. Production schedules for large quantities are planned well in advance. Customers are assured of deliveries scheduled to their needs.

Proper packaging is necessary too, for ease of handling and speeded production. Untangling springs can be irksome and expensive.

Accurate has a blueprint for successful spring design and quantity production. When you plan springs, plan with Accurate Spring Mfg. Co.

Accurate Springs | SPRINGS WIRE FORMS STAMPINGS

ACCURATE SPRING MFG. CO., 3810 W. Lake St., Chicago 24, Ill.

Gov't Contract Awards

(*Continued from page 353*)

CHAMPION SPARK PLUG CO., Toledo, Ohio
Spark plugs—various—$790,100
Spark plug, S/N 4708-REA-37N—418,-000 ea.; spark plug, S/N 4708-RHA-37N—1,514,500 ea.—$2,352,743

CHANCE - VOUGHT AIRCRAFT, INC., Dallas, Tex.
Special airframe tools for F7U-3 aircraft—various—$168,955
Spare parts for F4U-7 aircraft—various—$32,483

CHICAGO RAWHIDE MFG. CO., Detroit, Mich.
Seal assy., oil differential drive pinion & shaft—43,135 ea.—$35,672

CHRYSLER CORP., Detroit, Mich.
Automotive spare parts—various—$54,-123

CHRYSLER CORP., Highland Park, Mich.
Truck, tank, fuel servicing, 1200 gal 2½ ton, 19,000 GVW—22 ea.—$112,734

CLARK EQUIPMENT CO., Jackson, Mich.
Complete upright assys. and drive axle assys.—$97,035

CONTINENTAL AVIATION & ENGINEERING CORP., Detroit, Mich.
J69-T-9 engines, J69-T-A engines—$2,-761,774
Eight (8) 6 hp preproduction model military type gasoline engines—$119,-982

CONTINENTAL MOTORS CORP., Detroit, Mich.
Engineering services—$250,000
Design, develop and manufacture (2) engines—$63,064

CONTINENTAL MOTORS CORP., Muskegon, Mich.
Engine modification—various—$89,099
Parts—90 ea.—$62,186

A. CRESCI & SON, INC., Vineland, N. J.
Hi-Lift cargo trucks, loading of aircraft—$2,061,846

CURTISS - WRIGHT CORP., Caldwell, N. J.
Modification kits and spare parts for CT 7355-B108 propeller assys.—$83,125

DANA CORP., Toledo, Ohio
Shaft, propeller, assy. for 2½ ton truck —$64,812

DETROIT BEVEL GEAR CO., Detroit, Mich.
Shaft assy., propeller w/u joint—8975 ea.; shaft, propeller front w/universal joints assy.—5084 ea.—$151,134

DIAMOND T MOTOR CAR CO., Chicago, Ill.
Truck, tractor, coe, 10 ton, 4x2—45 ea.; truck, tractor, 10 ton, 6x4—5 ea.; truck, chassis, 6 ton, 4x2—1 ea.—$355,-429

DORSEY TRAILERS, Elba, Ala.
Semitrailer, van, 12 ton, 2 wheel, 30 ft., 30 ea.; semitrailer, van, 20 ton, 4 wheel, 32 ft., 1 ea.; semitrailer, stake, 12 ton, 2 wheel, 28 ft., 18 ea.; semitrailer, stake, 20 ton, 4 wheel, 32 ft., 10 ea.—$178,958

DOUGLAS AIRCRAFT CO., INC., Santa Monica, Calif.
Parts for R5D spares—various—$37,200
Parts for R4D spares—various—$26,867
Parts for R6D spares—various—$109,-766

ELECTRIC AUTO-LITE CO., Toledo, Ohio
Spark plug—70,300 ea.—$83,867
Battery, storage, 6-v, dry charged—3000 ea.; battery, 12-v, dry charged—12,000 ea.—$479,940

(*Turn to page 357, please*)

Lubrication by Farval is automatic, too, on these Cross Transfer-matics

FARVAL—
Studies in Centralized Lubrication
No. 194

● Automation is the soul of Cross Transfer-matic machine tools. They do as many as 73 machining operations one after another on complex parts, delivering more than 100 pieces per hour.

Vital to continuous operation of these machines is the lubrication system. It, too, is automatic. It is Farval. With Farval there is no need to stop a machine for lubrication of even its most inaccessible bearings. And Farval ensures that every bearing receives the proper amount of oil or grease as often as needed.

More and more, machine designers, engineers, and production men are employing Farval to protect the large investments represented by automated production lines. Farval's own sales engineers are availabie and eager to work with industry to meet any and all problems related to centralized lubrication. For Bulletin 26-R and details of our engineering service, write The Farval Corporation, 3296 East 80th Street, Cleveland 4, Ohio.

Affiliate of The Cleveland Worm and Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.

KEYS TO ADEQUATE LUBRICATION—
Wherever you can see these Farval manifolds, dual lubricant lines, and central pumping station, you know a machine is being properly lubricated.

(Advertisement)

MORE EFFICIENT DESIGN, IMPORTANT SAVINGS, SIMPLIFIED ASSEMBLY, BETTER APPEARANCE

These are some of the many benefits reported by Design Engineers who have adopted TRU-LAY PUSH-PULLS for remote control operations on literally hundreds of products

Here are typical comments recently received from equipment manufacturers whose machines or implements are equipped with these accurate and dependable remote controls:

Saves Time, Labor and Material
"The use of your flexible Push-Pulls saves us a great deal of time, labor and material. The old linkages frequently required much planning in both engineering and shop which is not required now. On some of our equipment we use Push-Pulls from 10 to 30 feet in length. They operate clutch controls on the Main Power Unit, Feed Conveyors and Delivery Conveyors."

Greater Flexibility of Design
"The principal advantage of Tru-Lay Push-Pulls in our application is that they permit flexibility in locating the control valve in relation to the operator's position."

Cost Less to Install
"Tru-Lay Push-Pulls are easier and less expensive to install than linkages for remote control of power take-off, brake and clutch. Better appearance, too."

Simple and Neat
"For several models of farm tractors, we selected your controls for their simplicity and neatness of application as governor controls."

Solution to Tough Problem
"Can be installed where straight rods are impossible . . . for Remote Control of transmissions, brakes and clutches."

Eliminates Maintenance
"Simple operation and elimination of maintenance problem are the major advantages in using your Push-Pulls."

Reduces Number of Parts
"Your Push-Pulls have eliminated links, radius rods and other lost-motion devices for remote control of hydraulic valves."

Provide ACCURATE Control
"Tru-Lay Push-Pull control cables provide minimum back-lash, even in installations up to 30 feet in length, because the cable is designed to close tolerances with minimum drag and lost motion."

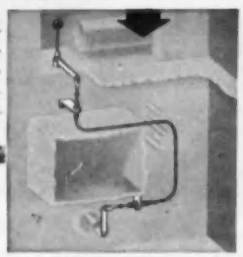
• • •

TRU-LAY PUSH-PULLS are "Solid as a rod but *Flexible* as a wire rope." This flexibility makes it possible to snake around obstructions . . . permits the ideal arrangement of all elements of remote controls.

***Advantages** of Tru-Lay Push-Pull flexibility and simplicity are pictured below—*

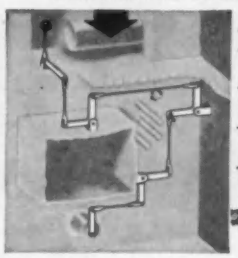
TRU-LAY PUSH-PULL

Simple
One Moving Part
Life-Time Service
Life-Time Accuracy
Low over-all Cost
Noiseless



MECHANICAL LINKAGES

Complex
Many Parts
Many Points of Wear
Increasing Back-Lash
Loss of Accuracy
Vibration
Rattles



Construction Equipment and **Farm Implements** provide good examples of the wide-spread use of these accurate, simple and dependable Push-Pulls. On Power Shovels, Winches, Graders, Road Oilers, Dump Trucks, Snow Plows, Engine-driven Pumps, Crushers, Tractors, Combines, Corn Pickers, Corn Row Sprayers, Corn Detasslers, Orchard Sprayers, Power-driven Tree Trimmers, Tobacco Picking Machines and others . . .

TRU-LAY PUSH-PULLS are operating unfailingly for the remote control of Hydraulic and Air Valves, Brakes, Clutches, Transmissions, Throttles, Chokes, Governors, Power Take-Offs, Spray Nozzles, Vent Directional Fins and on many other applications.

ACCO *Our DATA FILE will answer all further questions*

AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

601-H Stephenson Bldg., Detroit 2
2216-H South Garfield Ave., Los Angeles 22 • 929-H Connecticut Ave., Bridgeport 2, Conn.

There is No Worry about Failures or Maintenance Costs with TRU-LAY Push-Pull Remote Controls

Long Life is a matter of record. We have never heard of a Tru-Lay Flexible Push-Pull Control wearing out in normal service. Failures, that sometimes harass users of more complex controls, are eliminated by the use of these simple, positive-action controls.

Dependable Operation of these controls is a certainty, even under the most adverse conditions . . . HOT as jet engines (note: Tru-Lay Push-Pulls are actually performing on hot jet applications) . . . COLD to 70° F below zero . . . SOAKIN' WET . . . ABRASIVE . . . or just plain TOUGH.

Freedom from Trouble is assured because of such features as . . . full protection of the inner, working member by the tough flexible conduit . . . lubrication of the inner, working member *for life* during assembly . . . seals that keep moisture, dust and other foreign matter out of the unit . . . cold swaging of fittings that makes them integral parts of the control unit.

Accuracy is inherent in the basic design of Tru-Lay Push-Pulls. They are precision products, not gadgets.

Capacity ranges from light jobs up to jobs of 1,000 lbs. input. These Push-Pulls will handle jobs 150 feet or more from the control point.

"Solid as a rod, Flexible as a wire rope" aptly describes Tru-Lay Push-Pull Controls. This flexibility provides positive, remote action whether anchorages are fixed or movable . . . it damps out noise and vibration . . . it greatly simplifies installation of controls by reducing the number of working parts and by making it possible to snake around obstructions.

Adaptability to all sorts of mechanical situations explains, in large measure, the wide-spread application of Tru-Lay Push-Pulls. Standard anchorages, fittings and heads have been designed that meet requirements on approximately 80% of the installations. Simple modifications of these standards, or minor changes in your own design, cover almost every special situation. Our engineers have the know-how on such matters, and will work with you.

For Further Information—The DATA FILE pictured at the left contains six booklets and bulletins that will answer any further questions you may have about this versatile and dependable tool. It is quite likely that this material will point the way to a simplified solution of your remote control design problems. Write for a copy.

Gov't Contract Awards

(*Continued from page 354*)

ELECTRIC STORAGE BATTERY CO., Exide Industrial Div., Phila., Pa.
Battery, aircraft, 12-v, 88-amp—3069 ea.; battery, aircraft, 24-v, 36-amp—5158 ea.; battery, aircraft, 24-v, 11-amp—5229 ea.—$79,756
Batteries—1091 ea.—$55,832

FLETCHER AVIATION CORP., Rosemead, Calif.
Assys. & maintenance parts for R3Y-1,2 aircraft—various—$797,004

FORD DIV., Ford Motor Co., Livonia, Mich.
Truck, tank fuel servicing, 800 gals., 2 ton—52 ea.—$234,446

FORD DIV., Ford Motor Co., Washington, D. C.
Automobiles—83 ea.—$142,852

FORD MOTOR CO., Detroit, Mich.
Modification of Bldg. 5, minor repairs to AF Plant 39, rehabilitation of test cells and acquisition, rehabilitation and installation of machinery and equipment—$4,500,000

FORD MOTOR OF CANADA, LTD., Toronto, Canada
Station wagons—10 ea.—$17,990

FOUR WHEEL DRIVE AUTO CO., Clintonville, Wis.
Snowplow, rotary, truck mounted—12 ea.—$352,162

FRUEHAUF TRAILER CO., Detroit, Mich.
Semitrailer, van refrigerator, 7½ ton, 2 wh., M349 A 1—100 ea.—$641,281

GALION IRON WORKS & MFG. CO., Galion, Ohio
Grader, road, motorized with 12 ft. blade—80 ea.—$863,000
Grader, road, motorized—29 ea.—$316,-898
Roller, road, motorized, tandem, two axle, 5 to 8 ton, Diesel-engine driven—19 ea.—$114,570

GENERAL ELECTRIC CO., Aircraft Turbine Div., Cincinnati, Ohio
1957 product improvement program for J79 and J47/J73 turbojet engines—$10,000,000

GENERAL ELECTRIC CO., Erie, Pa.
Generators for C-130A aircraft—$458,336

GENERAL MOTORS CORP., AC Spark Plug Div., Flint, Mich.
Spark plug—674,400 ea.—$806,504

GENERAL MOTORS CORP., AC Spark Plug Div., Milwaukee, Wis.
Regulators—various—$35,712

GENERAL MOTORS CORP., Allison Div., Dayton, Ohio
Model A6341FN-D1 propellers for C-130 a/c—$16,612,312
Model A6341FN-196-B propeller—$260,-000
20 items of special tools and equipment for C119 aircraft, for a total of 535 pcs.—$18 ea.—$110,367

GENERAL MOTORS CORP., Allison Div., Indianapolis, Ind.
XTG-400 transmission—$34,975
Fabricate, build and functionally test XTG410-2 transmissions; saddle mounted final drives—8 and 9 ea.—$410,000

GENERAL MOTORS CORP., Chevrolet Motor Div., Detroit, Mich.
Automobiles—170 ea.—$242,362
Trucks—3 ea.—$10,005

GENERAL MOTORS CORP., Detroit Diesel Engine Div., Detroit, Mich.
Generator sets, electric, portable, Diesel engine driven, skid-mounted, ac—$99,-130

(*Turn to page 358, please*)

THOMSON

NYLINED*

BEARINGS

...with Smooth, Tough, DuPont NYLON!

...OFFER YOU THESE IMPORTANT BENEFITS

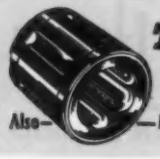
- LOWER COST
- NO LUBRICATION
- MINIMUM SPACE
- CLOSE FIT
- RESIST POUNDOUT
- RESIST ABRASION
- RESIST CORROSION
- EASILY INSTALLED
- DAMP VIBRATION
- OPERATE IN LIQUIDS
- NO FRICTION OXIDATION
- LOW FRICTION
- SILENT
- LIGHTEST WEIGHT
- NON-CONTAMINATING
- LESS MAINTENANCE
- SELF-RETAINING
- INSTANTLY REPLACEABLE
- LONGER LIFE

Engineered to Solve Problems... Improve Products... Reduce Costs!

NYLINED Bearings are a highly engineered thin liner of Dupont Nylon, designed to bring bearing users the many benefits of Nylon as a bearing material by solving most of the limitations surrounding its use. The compensation gap principle assures maintenance of diametral tolerances for precision applications.

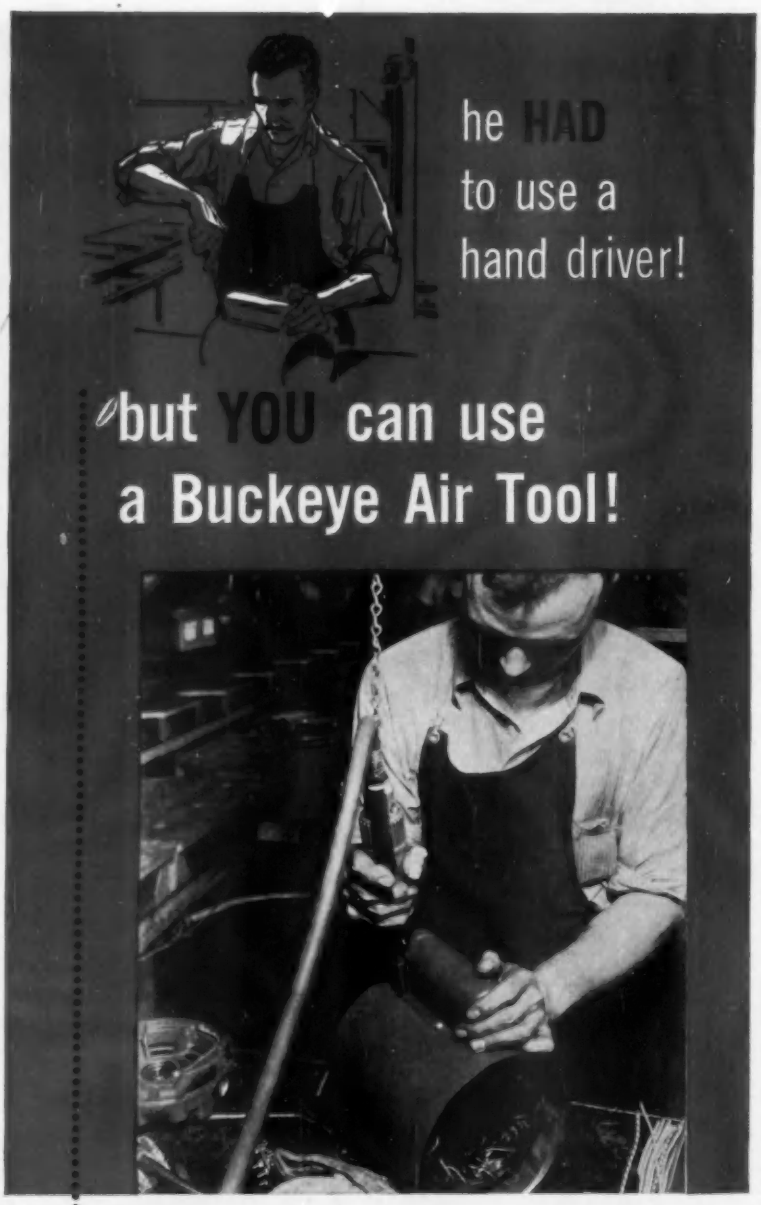
Available in 6 standard types, 10 standard sizes... from stock. Other types and sizes may be inexpensively tooled for production applications. For catalog containing data on advantages, applications, standard sizes, prices, special types, load ratings, engineering information, evaluation chart, installation methods ... write to

*REG U. S. PAT. OFF.



THOMSON INDUSTRIES, Inc.
DEPT. 1, MANHASSET, NEW YORK
Also— —Manufacturers of BALL BUSHINGS... the Ball Bearing for Linear Motions

2216-H South Garfield Ave., Los Angeles 22 • 929-H Connecticut Ave., Bridgeport 2, Conn.



Why AIR Tools?

Because air is everywhere, just waiting to be put to work . . . because continuous operation can't possibly harm an air tool . . . and because, if you're using Buckeye air tools, you can almost forget about tool maintenance.

In Air Tools, Your Best Buy Is Buckeye

Ever drive a screw with one finger? You can—with a Buckeye air-powered screwdriver. Just press the throttle and the job is done—instantly. You can drive ten screws this way in the time it takes to drive just one by hand. What's more, you won't burr the screw head or damage the workpiece.

Your assembly methods should be as modern as your product. They're not, if you're using manual methods, or even if you're using outmoded power tools. Our Catalog A-10, if you haven't seen it, discloses some very helpful information about modern assembly methods and Buckeye tools. May we send you a copy?

Buckeye Tools
CORPORATION
DIVISION 21 • DAYTON 1, OHIO

Gov't Contract Awards

(*Continued from page* 357)

GENERAL MOTORS CORP., GMC Truck & Coach Div., Pontiac, Mich.
Automotive spare parts—5920 ea.—$55,552
Transmissions—945 ea.—$725,420

GENERAL MOTORS CORP., New Departure Div., Bristol, Conn.
Bearings—14,000—$97,972
Bearing, ball, annular, single row, radial—various—$36,526

GENERAL MOTORS CORP., United Motors Service Div., Detroit, Mich.
Engine spare parts—4764 ea.—$166,645

GENERAL SAFETY EQUIPMENT CORP., Branch, Minn.
Truck, fire fighting—37 ea.—$373,145

GENERAL TIRE & RUBBER CO., Akron, Ohio
Nose wheel assys., 18x5.5, for F-101B, F-104A, F-104B, and RF-104A aircraft—$64,002
Nose wheel assys., 9.50-16—$115,914

B. F. GOODRICH AVIATION PRODUCTS The B. F. Goodrich Co., Akron, Ohio
Hub assy.—97 ea.—$30,867

B. F. GOODRICH CO., Dayton, Ohio
Wheel assys., nose, for C-133A aircraft—$54,749

GOODYEAR AIRCRAFT CORP., Akron, Ohio
Additional facilities for TM-61B missile guidance systems—$1,279,496

GOODYEAR TIRE & RUBBER CO., INC., Akron, Ohio
Parts used on brake assys.—various—$48,354
Brake assys.—various—$386,832
Wheel assys.—767—$354,101
Brake & wheel assys.—various—$88,443
Nose wheel assys., for KC-135A aircraft—$60,472

GRAMM TRAILER CORP., Lima, Ohio
V-79, 30 ft. semitrailer—2 ea.—$38,603

GRUMMAN AIRCRAFT ENGINEERING CORP., Long Island, N. Y.
Spare parts for F9F and F6F aircraft—various—$29,228
Iran and modification of 85 8A-16 aircraft, and 8 UF-1G—$9,743,522

HAYES AIRCRAFT CORP., Birmingham, Ala.
Materials and components for modification of KB-50 aircraft—$2,979,366

HOLLEY CARBURETOR CO., Van Dyke, Mich.
Services, repair & modify fuel controls—various—$443,462
Kits—various—$46,346
Spare parts for carburetors—36 items—$38,801

HUGHES AIRCRAFT CORP., Culver City, Calif.
Facilities for the maintenance of GAR missiles—$920,000
Intercepter aircraft & weapon control system—$10,000,000

HUGHES-KEENAN CORP., Delaware, Ohio
Truck, crane, whse. and industrial, gasoline, 19,000 and 20,000 lb. cap.—23 ea.—$274,738

HYSTER CO., Portland, Ore.
Truck, fork lift, 15,000 lb. cap.—4 ea.—$56,600

INDUSTRIAL LAMP CORP., Elkhart, Ind.
Stoplight, tail light, vehicular, blackout waterproof, 24-v assy.—8900 ea.—$52,982

(*Turn to page* 362, *please*)

(Turn to page 358, please)

BENDIX-WESTINGHOUSE AIR BRAKES
Best for original equipment because they're used by America's leading fleet operators!

Here's what **PACIFIC INTERMOUNTAIN EXPRESS** says about Air Brakes...

With headquarters in Oakland, California, P. I. E. has more than 3,000 pieces of mobile equipment in daily operation over 15,000 miles of scheduled routes. This modern, efficient fleet provides transcontinental shippers with dependable door-to-door motor freight service between the entire Pacific Coast and the midwestern gateways of Chicago, St. Louis, Kansas City and Wichita.

"During our 16 years in business
We've bought 6,000 trucks
AND WHEN IT COMES TO AIR BRAKES, WE USE
Bendix-Westinghouse!"
THE WORLD'S MOST TRIED AND TRUSTED AIR BRAKES

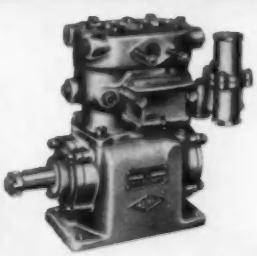
Here's what **R-C MOTOR LINES, INC.** says about Air Brakes...

With general offices in Jacksonville, Florida, R-C Motor Lines, Inc., provides fast, dependable express freight service to shippers along the eastern seaboard. The modern R-C fleet is comprised of over 500 rigs traveling interstate routes between 13 terminal points located in the states of New York, Pennsylvania, Maryland, Virginia, North and South Carolina, Georgia and Florida.

"During our 18 years in business
We've bought 1,000 trucks
AND WHEN IT COMES TO AIR BRAKES, WE PREFER
Bendix-Westinghouse!"
THE WORLD'S MOST TRIED AND TRUSTED AIR BRAKES

It is a rarity indeed when a product in any field demonstrates customer use so strong that it continually *outsells all other competition combined* year after year. Yet, for the past twenty-five years this has been the remarkable accomplishment of Bendix-Westinghouse Air Brakes in the truck and bus fields! In fact, recognition of the greater safety, economy and dependability of Bendix-Westinghouse Air Brakes by truck buyers has resulted in their factory installation on more and more truck models of all sizes.

Chances are good that your trucks, too, offer the many advantages of these powerful brakes. If not, we suggest you take advantage of the proven superiority of Bendix-Westinghouse Air Brakes by offering them as factory-installed equipment. It's one sure and easy way to add more sales appeal to your vehicles!



Over 1,500,000 compressors, produced over a twenty-five-year span, stand behind the TU-FLO 400. Many advanced features guarantee performance no other compressor can equal.

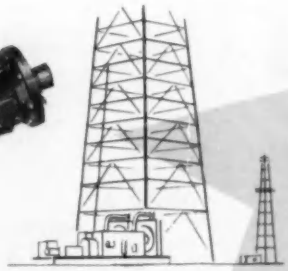
Bendix-Westinghouse AIR BRAKES

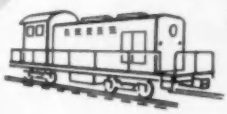
BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY • General offices and factory—Elyria, Ohio. • Branches—Berkeley, Calif. and Oklahoma City, Okla.

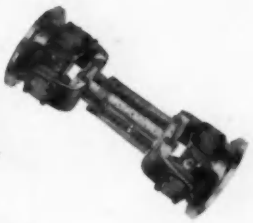
$52,982

(Turn to page 362, please)

DANA CORPORATION • TOLEDO 1, OHIO







. . . . Star Performers in many different fields!

Wherever you see movement . . . on land or water, in the sky or underground . . . chances are you will find one or more Spicer Universal Joint and Propeller Shaft units delivering power efficiently and dependably.

Spicer produces hundreds of different drive lines in thousands of variations, for use in the automotive, aviation, transportation, marine, agricultural and industrial fields.

The first successful, commercially-produced universal joint for automotive use was introduced by Clarence W. Spicer in 1904. In 1957, backed by over 50 years of continuous service and development, Spicer Drive Lines are being used in a majority of the automotive vehicles made throughout the world.

Spicer Universal Joints include these features:

Sliding splines have ground finish on ALL contact surfaces, high hardness, and iron manganese phosphate coating.

True bearing alignment with rigid one-piece yoke design. *This rigidity is the essence of accuracy.*

Precision bearings with improved surface hardness and finish.

Dynamically balanced to exacting limits.

Uniform high quality propeller shaft tubing. Special steels used to Dana specifications.

Wide selection of flange and yoke types, and a complete range of sizes to suit each individual requirement.

Whatever your drive line problem, in your particular industry, Dana engineers have the experience and know-how to give you the answer.

Spicer

SPICER PRODUCTS: Transmissions • Universal Joints • Propeller Shafts • Axles • Torque Converters • Gear Boxes • Power Take-Offs • Power Take-Off Joints • Rail Car Drives • Railway Generator Drives • Stampings • Spicer and Auburn Clutches • Parish Frames • Spicer Frames •Universal Joints also Manufactured in Canada by Hayes Steel Products Limited, Merritton, Ontario.

More Government Contract Awards

(*Continued from page 358*)

INTERNATIONAL HARVESTER CO., Melrose Park, Ill.
Tractor, crawler type, Diesel-powered—7 ea.—$101,882
Tractors—2 ea.—$27,920

INTERNATIONAL HARVESTER CO., Washington, D. C.
Trucks—4 ea.—$94,113
Truck, Int. model SM-160—12 ea.—$65,546
Truck, tractor, 15-ton, 6x4—4 ea.; tank, water distributor, 6-ton, 4x2—2 ea.; wrecker, 5-ton, 6x4—1 ea.—$57,075
Truck, wrecker, 10-ton cap., 3-ton, 21,000 GVW—6 ea.; truck, maintenance, line construction, 2½-ton, 19,000 GVW—2 ea.; truck, chassis, w/cab, 3-ton, 21,000 GVW—1 ea.; truck, tractor, 2½-ton, 19,000 GVW—1 ea.; truck, stake & platform, 2-ton, 16,000 GVW—2 ea.—$60,788

JACK & HEINTZ, INC., Cleveland, Ohio
DC generators, 300 amp, type MA-8 for C-124 aircraft—$991,311
Generators, engine-driven, 30-v, 300-amp—3434 ea.—$1,081,893

R. G. LETOURNEAU, INC., Longview, Tex.
Design, test and furnish electric ground launch vehicle—$80,333

LOCKHEED AIRCRAFT CORP., Marietta, Ga.
Performance of non-recurring maintenance of Air Force plant No. 6—$2,046,000
Fabrication of one structurally complete C-130A aircraft (minus control surfaces, vertical empennage and outer wing panels); conduct a 25,000 cycle test program—$880,445

LORD MFG. CO., Erie, Pa.
Shear mounts—14,630—$87,780

LYNCOACH & TRUCK CO., INC., Oneonta, N. Y.
Trailer, bomb, 2T, 4wh—179 ea.—$521,111

McDONNELL AIRCRAFT CORP., St. Louis, Mo.
Tank assys.—various—$394,519
Elevator & flap assys.—various—$193,898
Parts for F2H spares—various—$96,620

MARLIN-ROCKWELL CORP., Jamestown, N. Y.
Bearings—20,000—$36,800

GLENN L. MARTIN CO., Baltimore, Md.
Modification kits for B-57 aircraft—$96,510
Engineering and prototype applicable to B-57 aircraft—$550,000

NORTH AMERICAN AVIATION, INC., Downey, Calif.
Non-recurring maintenance, Air Force plant No. 16—$1,082,670

NORTH AMERICAN AVIATION, INC., Los Angeles, Calif.
Install GFAE prototype MH-44B autopilot—$1,070,511

NORTHROP AIRCRAFT, INC., Hawthorne, Calif.
Implementation of T-38 aircraft program—$2,714,996

PESCO PRODUCTS DIV., Borg-Warner Corp., Bedford, Ohio
Parts for pump assys.—various—$47,715
Maintenance parts to support fuel pumps—various—$32,333

PUROLATOR PRODUCTS, INC., Rahway, N. J.
Filter assys. & maintenance parts—various—$74,979

REO MOTORS, INC., Lansing, Mich.
Truck, tank, fuel servicing, 2000 gal., 24,000 GVW, 5-ton—38 ea.—$272,750

ROSS GEAR & TOOL CO., INC., Lafayette, Ind.
Valve assy.; hydraulic control—1084 ea. & 1926 ea.—$107,439

RYAN AERONAUTICAL CORP., San Diego, Calif.
Acquisition, rehabilitation and installation of machinery and equipment for J-79 engines—$210,000
Perform detail design and engineering services—$745,093

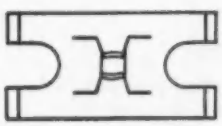
SOLAR AIRCRAFT CO., San Diego, Calif.
Acquisition, rehabilitation and installation of machinery and equipment for production of J-79 engine components—$467,400

SUNDSTRAND MACHINE TOOL CO., Sundstrand Aviation Div., Rockford, Ill.
Transmission and gear box assy.; gear box engine mounted; cover, shaft; gear pad A, for F106 aircraft—$3,123,703
Mounted gear box, for F/TF-102A aircraft—$42,168

THOMPSON PRODUCTS, INC., Cleveland, Ohio
Acquisition, rehabilitation and installation of machinery and equipment for J-57 engine components—$225,000

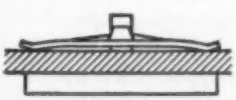
(*Turn to page 364, please*)

THIS Fastener works every time!



Four Gripping Teeth provide maximum gripping action, even on hard chrome studs.

Long, High Spring Arch maintains tension in service; compensates for wear on parts.



Turned Up Ends slide smoothly over body deadener, radio grilles and plastic surfaces without digging.

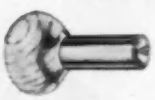
Write for free samples, stating size, material, finish

TYPE "H" PUSHNUT® FASTENERS

For unthreaded studs of Ornaments — Nameplates — Emblems

The improved design of Type "H" PUSHNUTS brings you ease and speed of application—savings on assembly costs—security of fastening never before achieved on unthreaded studs. With all their advantages, PUSHNUTS are very low in price. Made of tempered spring steel in plain, parkerized and cadmium finishes. Sizes for 1/16", 3/32" and 1/8" studs. Have our fastening engineer demonstrate—or run your own tests.

Fast, Positive Assembly



Manual Applicators

Power Tool Shanks

Magnetic and non-magnetic

THE PALNUT COMPANY 60 Glen Road, Mountainside, N. J.

Subsidiary of United-Carr Fastener Corp.

Regional office and warehouse: 730 West Eight Mile Road, Detroit 20, Mich. Tel. JOrdan 4-6087

•Universal Joints also Manufactured in Canada by Hayes Steel Products Limited, Merritton, Ontario.

McKay's
PRESS FEED LINE

McKay's Press Feed or Cut-Up Line has rapidly gained acceptance wherever mass production of metal stampings is part of the manufacturing function. . . . From coil handling to automatic press feeding this line is the most successful yet developed. It uncoils, cleans, conditions and precisely measures the steel swiftly and economically. McKay engineers will show you one of these modern lines in operation at your earliest convenience.

THE McKAY MACHINE COMPANY
Youngstown, Ohio

McK

SETTING THE STANDARDS OF QUALITY METAL WORKING MACHINES FOR TWO GENERATIONS

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If your product requires threaded fasteners...

Ingersoll-Rand

ASSEMBLY MACHINES can help you save time, money and improve product quality

- any size bolt or screw!
- hand held or automatic!
- maintains desired torque!
- as many spindles as you want!

Contact an Ingersoll-Rand AIRengineer now . . . he's your link with a world leader in automatic assembly machines.

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Ingersoll-Rand
11 Broadway, New York 4, N.Y.

Gov't Contract Awards

(*Continued from page* 362)

UNITED AIRCRAFT CORP., Hamilton Standard Div., Windsor Locks, Conn.
Services and material for propeller blades—285 ea.—$92,520

VERTOL AIRCRAFT CORP., Morton, Pa.
Replacement of Government - owned tools—$196,901

WATSON AUTOMOTYPE EQUIPMENT CO., Washington, D. C.
Automobile, ambulance, metropolitan—77 ea.—$366,745

WESTINGHOUSE ELECTRIC CORP., Dayton, Ohio
Generator, type MB-3 (support of F-105B/C & KC-135A aircraft); regulators, 3-phase, AIU-1306; panel assy. AIU-1276; transformer assys.; and rack assys.—$1,600,046
Generators, ac, aircraft, 40 kva, for F-102 and C-130 aircraft; panels, protective; regulators, voltage; panels, control—$303,777

WILLYS MOTORS, INC., Toledo, Ohio
Trucks & spare parts—1 lot—$326,449
Trucks—5 ea.—$15,413
Truck, cargo, pickup, ¼ ton 4x4—$163,489

Harder and W. C. Ford Assume More Responsible Positions

Two significant appointments in top echelon positions were made by Ford Motor Co. last month. They were the naming of D. S. Harder as executive vice president and the selection of William Clay Ford as vice president for product planning and styling.

Harder had been executive vice-president of the basic manufacturing divisions, which he will continue to head. In addition, he will now be responsible for all the car, truck, and tractor divisions.

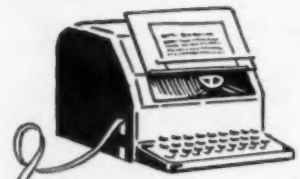
In his new post, William Clay Ford will be responsible for coordination and review of all forward product programs. He will report directly to the president and board chairman.

Cost Reductions Helped Boost Diamond T Earnings Last Year

Diamond T Motor Car Co. turned in highly impressive record for 1956. Despite a decline in unit sales of trucks last year, earnings from operations soared to $1.29 million from $155,024 in 1955. The company credited increased efficiency and reduced production costs for the higher earnings.

Total profits from all sources, such as the sale of property and other nonrecurring items totaled $1.7 million. This compared with $279,941 in the previous year.

Sales last year rose to $45.4 million from $37.9 million in 1955. About 80 per cent of the total volume came from heavy-duty and Diesel-powered trucks.



ON OUR WASHINGTON WIRE

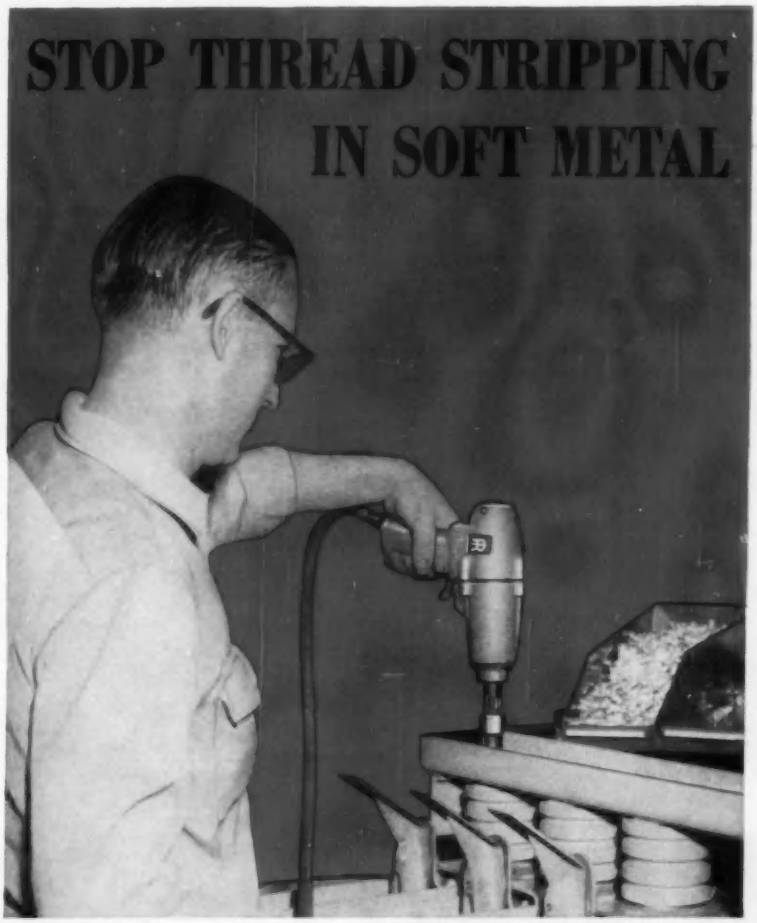
Federal Trade Commission has announced that the trend of corporate mergers continued upward in 1956 with a total of 905 mergers, as opposed to the 1955 total of 846. The 1956 figures show fewer mergers among manufacturing and mining businesses (638 compared to 689 in 1955) and more mergers in the retail and wholesale fields (148 compared to 83 in 1955).

Stockpile purchases by the Government this year will go up by about $25 million. Expenses of the program are rising, despite a shrinking list of goods being purchased.

Small suppliers of military goods are getting new aid toward an improved share of the Army procurement dollar. Contracting officers now must provide written proof that small firms have a chance to bid for specific awards.

Specific policies and techniques relating to price negotiation with contractors of the Defense Dept. are included for the first time in a new section of the Armed Services Procurement Regulations. The text will be published shortly in the ASPR and the Federal Register. Copies of the regulation (Revision No. 19 to the Armed Services Procurement Regulation) will be offered for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at a nominal price.

Business and Defense Services Administration has assigned a top priority to the Inter-Continental and Intermediate Range Ballistic Missiles programs (ICBM-IRBM) for the purchase of materials above all other defense programs.



here's how it's being done with Ingersoll-Rand TORQUE CONTROL impactools!

If you assemble soft metal threaded parts, such as aluminum or bronze, take a look at the improvement record made by this large electrical manufacturing company.

Parts spoilage is substantially reduced and product quality greatly improved since changing from conventional air powered wrenches to new Ingersoll-Rand Torque Control Impactools for running nuts and cap screws. These revolutionary Impactools shut off instantly and automatically when the preset torque is reached. No more stripped threads . . . and every fastener is precisely tightened for top quality.

Call or write for bulletin 5170, or ask for an obligation-free demonstration.

Ingersoll-Rand
11 Broadway, New York 4, N.Y.

6-523

High Precision Brazing of Jet Engine Fuel Manifolds

(*Continued from page* 316)

degrees. The cut angle is then deburred.

When the assembly is ready to braze, a copper ring is inserted into the ferrule and is stopped by the reamed shoulder. The ferrule is then slipped over the Inconel pig-tail, holding the copper ring against the shoulder, and the assembly is brazed.

Cutting the one end of the ferrule at an angle distributes stresses and greatly minimizes the possibility of a fracture.

The Inconel tubing is bent into a pig-tail to absorb vibration and prevent fracture. It is cut into 12-in. lengths, plus or minus 0.020-in. on the length, and is then bent to the pig-tail configuration. The bent tubes are inspected for both contour and diameter in a fixture developed from a master tube.

The first shipment of a heat of both Inconel and type 347 is given a complete chemical and mechanical check. In addition, the micro-structure of type 347 is examined to see if there is any carbon in the micro-network. Inconel is given a chemical spot test for identity. In subsequent shipments on the same heat, only the important elements are analyzed. Physical tests are the same as for the first shipment.

Part of the length of every piece of tubing received is checked for diameter and in addition samples of every shipment are gaged the entire length of the tube for diameter and wall thickness. The material conformance affidavit from the supplier is checked with the Aeronautical Material Specification which applies.

The Inconel pig-tails are checked 100 per cent for length, contour, nicks, burrs, dirt and scratches. Each tube is also swaged. After inspection they are degreased and stored.

The finished ferrules are 100 per cent inspected for ID, OD, length, angle, chamfer, burrs, heat number and part number. On machined parts, every tolerance is held to a maximum of 0.003-inch. Diameters of tubing and parts are checked in a variety of ways, using a Sheffield Shadowgraph, micrometers and ring gage. So rigid are the standards that the slightest nick in any part is cause for rejection.

The fixture, in which the parts are rigidly clamped before brazing, weighs 1400 lb and is machined as accurately as the parts themselves. It is made from stainless steel to get the same coefficient of expansion as for the stainless and Inconel parts used in the manifold. Bell-type vacuum furnaces are used for brazing tubes within tubes.

After brazing, the manifold is checked for any defects and is placed in an acceptance fixture to test for size and configuration. Since the manifold is used for a high pressure fuel system, it is pressure tested at 1200 psi. The brazed assembly is inspected by National-U. S. Radiator, the Air Force, Ford Motor Co. and Pratt & Whitney Aircraft.

YA® radiators...

On giant diesel locomotives . . . one of the toughest of all radiator applications as far as space limitations, power concentration, and vibration characteristics are concerned . . . you'll find Yates-American radiators specified as the radiators that can take rough going, and like it! So whatever your products . . . if you require the best in radiators, write today for complete information and descriptive literature on Yates-American radiators for all purposes.

California Representative:
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YA® Heat Transfer Products Division
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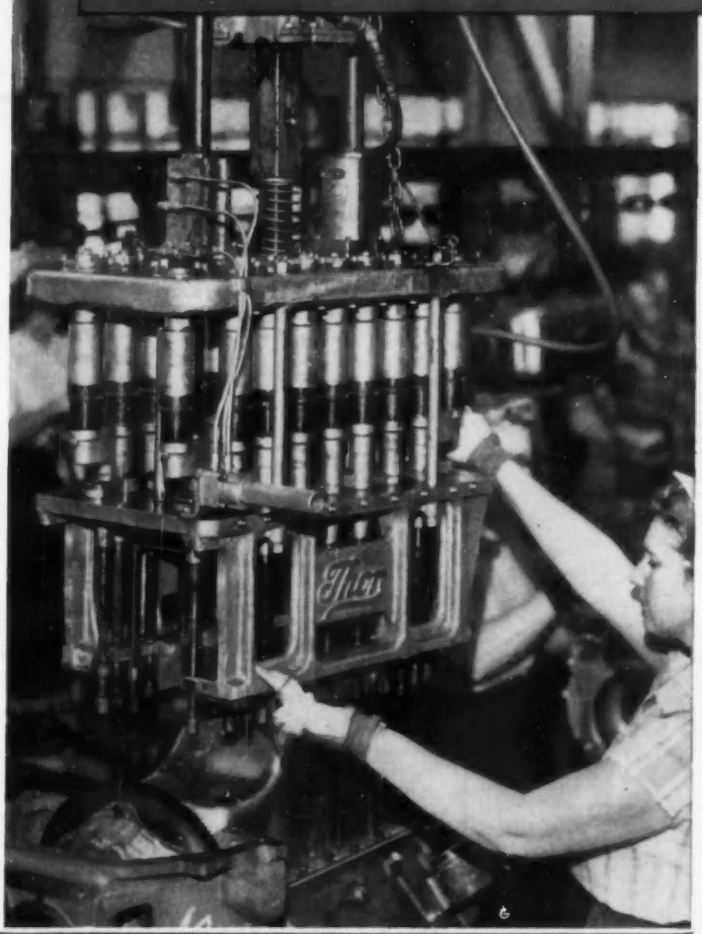
BRANCH OFFICES: CHICAGO, ILLINOIS, HIGH POINT, NORTH CAROLINA, MEMPHIS, TENNESSEE, PORTLAND, OREGON

AUTOMOTIVE INDUSTRIES . . .
is your News Magazine of Automotive and Aviation
MANUFACTURING

If you run two or more fasteners at the same time—cut costs with

THOR MULTIPLE NUTSETTERS AND SCREWDRIVERS



Now, thanks to Thor multiple nutsetters and screwdrivers, the largest to the smallest assembly operation can enjoy the cost cutting benefits of automation. If you have production assembly jobs involving 2 to 20 or more nuts or screws, Thor multiples can return their cost in labor savings, in improved quality control, time and time again.

Running multiple fasteners at one time means every fastener is tightened to identical torque simultaneously with no shift in tensile load equilibrium which occurs when fasteners are tightened one at a time.

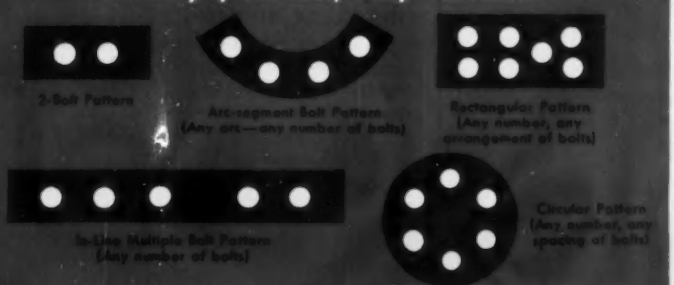
For the complete story of how Thor multiples can help you, write today for Thor's free book "Automation in Assembly." Thor Power Tool Company, Prudential Plaza, Chicago 1, Illinois.

THOR POWER TOOL CO., CHICAGO

Branches in all principal cities

Thor PORTABLE POWER TOOLS

Thor multiple tools can be custom-built to any pattern, any number


2-Bolt Pattern
Arc-segment Bolt Pattern (Any arc—any number of bolts)
Rectangular Pattern (Any number, any arrangement of bolts)
In-Line Multiple Bolt Pattern (Any number of bolts)
Circular Pattern (Any number, any spacing of bolts)

FREE

AUTOMATION MANUAL ON MULTIPLE FASTENER SETTINGS

Pictures, diagrams, all the facts

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TITLE_____

COMPANY_____

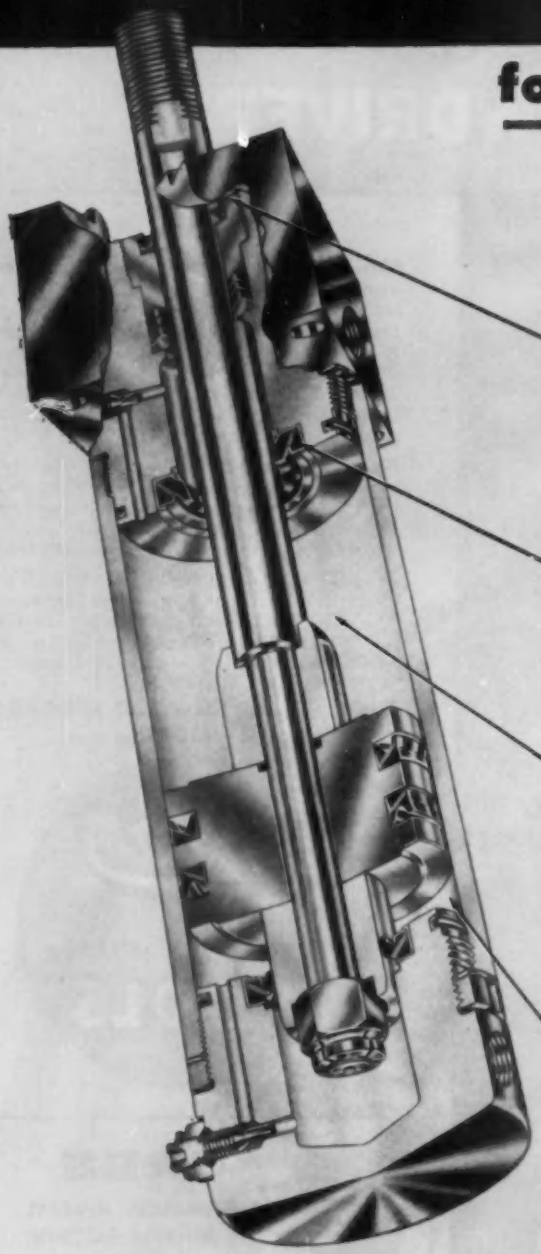
STREET_____

CITY_____ ZONE___ STATE_____

Need a cylinder today?

for all these Extras . . .

T-J Spacemaker



PISTON ROD SCRAPER . . . Not just a felt or fabric wiper, but a metal to metal contact. Protects rod packing and cylinder bores at all times by actually removing foreign particles from piston rod surface. STANDARD AT NO EXTRA COST!

NEW "SUPER" CUSHION FOR AIR . . . Of T-J design and patent, it assures millions of trouble-free cycles. Years of T-J research and test have answered the problem of "how to make a cushion last". All T-J cushions are adjustable, STANDARD AT NO EXTRA COST!

CHROME PLATED CYLINDER BORES AND PISTON RODS . . . The piston rod, of course. But of these two features, the chrome plated bore is by far the most important, due to the much greater area that is subject to wear. Chrome plating of bore gives extra protection where needed most. Also a protection from condensation and foreign matter, that may find itself into the system. STANDARD AT NO EXTRA COST!

ONE PIECE PISTON . . . Giving you three point surface bearing which increases the distance from the piston end to the rod bearing. This T-J feature assures better alignment, longer bearing and packing life. STANDARD AT NO EXTRA COST!

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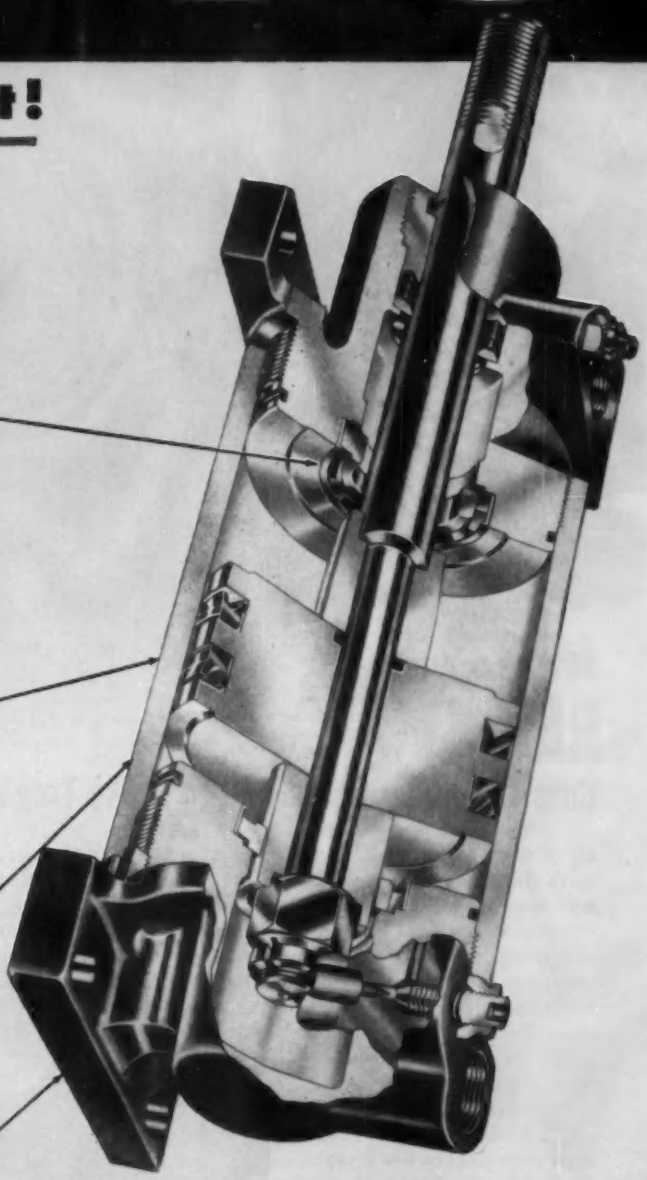
. . . Just call T-J

at no Extra Cost!

cylinders



NEW "SELF-ALIGNING" MASTER CUSHION FOR HYDRAULIC USE . . . (Pat. Applied For) New T-J cushion design eliminates problems of worn out, or out-of-line cushion seals. Eliminates need of a ball check while greatly increasing the return flow, assuring fast breakaway on return stroke. All T-J cushions are adjustable, STANDARD AT NO EXTRA COST!

NO TIE RODS TO STRETCH . . . By eliminating tie rods, the T-J SPACEMAKER gives you 360 degree port rotation, streamlined design, no tie rod stretch, without sacrificing strength. STANDARD AT NO EXTRA COST!

STREAMLINED DESIGN . . . Minimum center-line to center-line mounting—years ahead and in keeping with modern trends. Easy to clean for an extra appearance on your machine, without sacrificing strength. Oil pressure to 750 P. S. I.—air to 200 P. S. I. STANDARD AT NO EXTRA COST!

FORGED SOLID STEEL HEADS . . . (4" bore through 8" bore) Requires no additional mounting brackets, because mounting holes are a part of the one piece solid forged steel head. Its design lends itself to smooth streamlined modern appearance. STANDARD AT NO EXTRA COST!

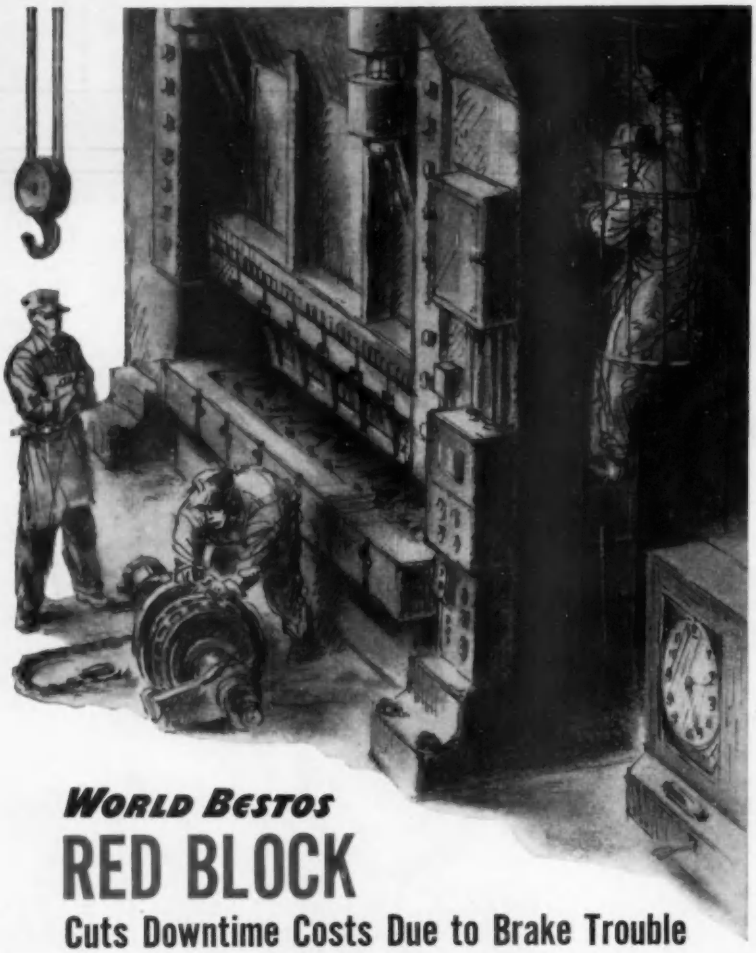
WRITE TODAY for new bulletin with complete details of the T-J Spacemaker line, or call Jackson, Michigan, State 2-0462.

MEMBER OF THE NATIONAL FLUID POWER ASSOCIATION

THE TOMKINS-JOHNSON CO.

JACKSON, MICHIGAN

RIVITORS . . . AIR AND HYDRAULIC CYLINDERS . . . REAMERS . . . CUTTERS . . . CLINCHORS

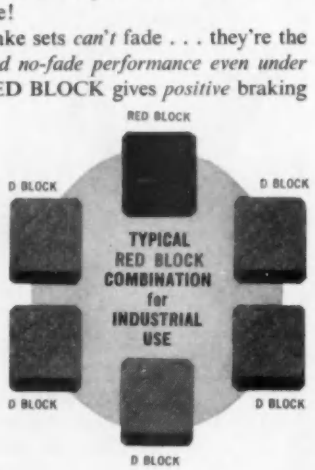


WORLD BESTOS
RED BLOCK
Cuts Downtime Costs Due to Brake Trouble

Up to *600%* longer wear . . . major reduction in downtime costs . . . that's the amazing story of RED BLOCK performance on brakes and clutches—wherever it's in use!

World Bestos RED BLOCK brake sets *can't* fade . . . they're the *only* linings that supply *guaranteed no-fade performance even under stepped-up operating conditions.* RED BLOCK gives *positive* braking power at highest operating temperatures . . . let's you "pinpoint" stops where you want them, when you want them.

Try RED BLOCK next time you're "braking up" . . . ask for it when you buy new equipment. You'll soon see how much less the best really costs.



● Write for full information and illustrated folder on RED BLOCK Combinations for industrial uses.

WORLD BESTOS NEWCASTLE, INDIANA
DIVISION OF THE
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Brake Blocks and Linings • Clutch Facings • Transmission Linings • Spring Liners and Buttons • Special Friction Materials

BUSINESS PULSE

(*Continued from page* 304)

they may be misleading, as similar signs have sometimes been in the past. Thus, it is understandable that some analysts caution that more evidence will have to accumulate before a definite abandonment of anti-inflationary policies will be justified, particularly in view of the known fact that some important wage contracts—such as could materially affect the wage-price spiral—are scheduled for renegotiation this year.

Analysts seem rather generally agreed that if significant weaknesses do emerge this year in any of the major components of gross national product, they are likely to be concentrated in the investment areas. Specifically, it is investment by business in plant, equipment, and inventories that is judged today to warrant the closest watching.

Plant Investment Levels Out

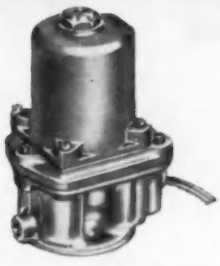
Plant and equipment expenditures already seem to be leveling out, to judge from estimates for the first quarter of the year, and with profit positions none too satisfactory there can be no assurance that this leveling out will not develop into an actual decline. It is true that preliminary estimates for the fourth quarter of 1956 made by the Council of Economic Advisors indicate that the previously declining trend of profits was at least temporarily arrested in that period. Assisted by the end of the steel strike and by the fact that higher prices increased inventory "profits," the seasonally adjusted annual rate of all corporate profits before taxes rose to $46 billion, which is appreciably above the third-quarter rate. Even so, profits were slightly below the total for the fourth quarter of 1955, hardly an impressive showing in view of the fact that all other components of national income, except the rental income of persons, were higher on a year-to-year basis.

Such surveys of businessmen's investment intentions as have been made for 1957 as a whole imply some further rise in expenditures for plant and equipment above the level estimated for the first quarter of the year. There can be no guarantee that such intentions will actually be executed, however, especially if the profits squeeze persists. It is by no means inconceivable that plant and equipment expenditures could recede in sufficient degree in the latter part of this year to negate the rise which

NEW Ross Starline air control valve series

NEW long life

WHITE STAR
SPOOL SOLENOID



GOLD STAR
OIL-IMMERSED SOLENOID

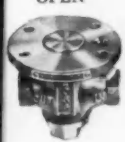
BLUE STAR MV

BLUE STAR TD

BLUE STAR WV

NEW match any head to any valve body!

STRAIGHTWAY NORMALLY OPEN

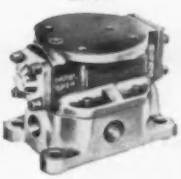


STRAIGHTWAY NORMALLY CLOSED

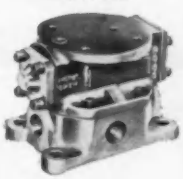
3 WAY NORMALLY OPEN

3 WAY NORMALLY CLOSED

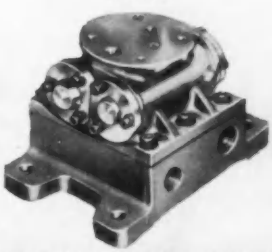
3 WAY NORMALLY OPEN



3 WAY NORMALLY CLOSED



4 WAY



Tests indicate a trouble-free life of over 25 million cycles for valves with the spool solenoid pilot section, and *more than 40 million for all other Starline* valves shown.

Heads and bodies are completely and instantly interchangeable. Sizes from ¼" to 1¼". Even *more* Starline models coming later. Write for Starline data file.

A Galaxy of New Air-Control Stars Are Coming Your Way From

Ross OPERATING VALVE COMPANY

128 EAST GOLDEN GATE AVENUE • DETROIT 3, MICHIGAN

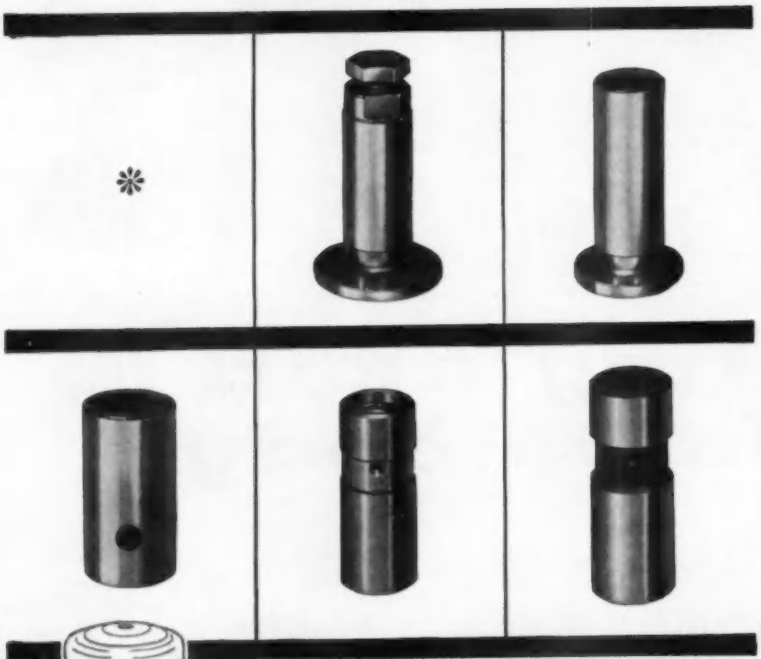
is anticipated in governmental spending.

Inventories Are Adequate

If this should occur, and if at the same time inventory accumulation—which in the fourth quarter of 1966 ran at an annual rate of $4.1 billion—should cease, the stage would have been set for a possible downturn, albeit perhaps a mild one, in gross national product. Inventories are not necessarily excessive today in relation to sales volume, but in general they are judged to be adequate, so that strong pressures for substantial accumulation do not exist, especially in view of the abatement of price pressures which seems to be occurring in primary markets and the general ready availability of goods.

These are, of course, nothing more than possible future difficulties. They may never develop. They are mentioned only for the purpose of pointing up key areas which should be watched for possible signs of weakness in the months ahead. Even if they should develop, the consequences would in all probability be mild, so long as consumer willingness to buy did not falter.

JOHNSON *tappets*



keep pace with today's engines

Continual experimentation and excellent manufacturing methods show a steady product improvement that make JOHNSON TAPPETS worthy of your consideration. Only proven materials, covering a range of steel, chilled iron, and various iron alloys are used in the manufacture of JOHNSON TAPPETS, providing greater strength, light weight and increased wear resistance. Serving the AUTOMOTIVE — AIRCRAFT — FARM — INDUSTRIAL — MARINE Industries.

"tappets are our business"

JOHNSON JP PRODUCTS

MUSKEGON, inc. MICHIGAN

Free Literature

(*Continued from page* 300)

Profile Recorder 26

A four-page bulletin describes an instrument called the Proficorder that is designed to measure and record the profile of machined or finished surfaces. *Micrometrical Mfg. Co.*

Radiation Gage 27

Data Sheet 10.9-3 explains how a new Curtiss-Wright radiation gage is used with an electronic strip chart recorder to make continuous non-contact measurement of weight per unit area of sheet materials. *Industrial Div., Minneapolis-Honeywell Regulator Co.*

Permanent Magnets 28

Form DMPM-56-2 is a 12-page booklet containing basic information on permanent magnets, thermistors and Thyrite varistors, and discusses possible applications from the designer's standpoint. *General Electric Co.*

Synthetic Rubber 29

Illustrated booklet A-2972, 15-pages, is a new publication on the characteristics, as well as applications, of Neoprene and Hypalon. *E. I. du Pont de Nemours & Co.*

Glass 30

"This Is Glass" is the title of a colorful 66-page brochure which includes discussions of manufacturing methods and applications for glass. *Corning Glass Works.*

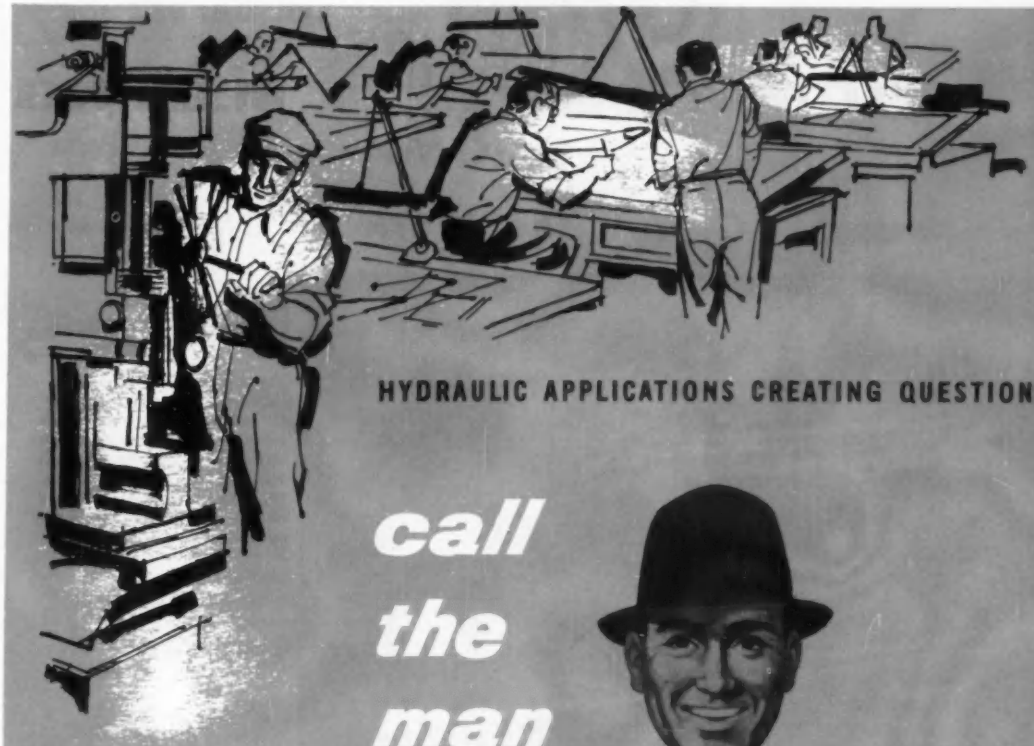
Thermostats 31

An eight-page data book covers precalibrated thermostats which automatically make or break circuits and which can be used in a variety of electrical and electronic instrument applications. *The Franklin Dales Co.*

Coating Gages 32

Instruments that will measure nondestructively the thickness of coatings such as paint, nickel and related materials, are described in Bulletin 2253, issued by *American Instrument Co., Inc.*

(*Turn to page* 375, *please*)



HYDRAULIC APPLICATIONS CREATING QUESTIONS?

call the man from Webster

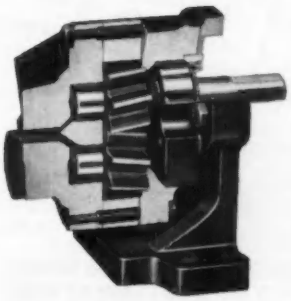
Evaluating hydraulic systems? Balancing pressures and flows against costs? Then, the man from Webster can help you. Today, when you are caught between price and performance, his technical help slanted in a fresh direction, can be the push that gets you into the clear. Call the man from Webster whenever you require hydraulic pump help for lubricating, oil circulating, filtering, transfer or quiet hydraulic power applications. He's a good man to have on your design team.

OIL HYDRAULICS DIVISION

WEBSTER ELECTRIC
MELROSE 3-3511
RACINE · WIS

OVER 100 MODELS

Capacities: *1/5 to 30 GPM*
Pressures: *Up to 1500 PSI*
Speeds: *Up to 3600 RPM*
Drives: *Direct or Geared*
Torques: *Up to 60 in. lbs./100 PSI*
Available with or without built-in relief valves



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☐ *Have THE MAN FROM WEBSTER contact us—*

- Please send the following -

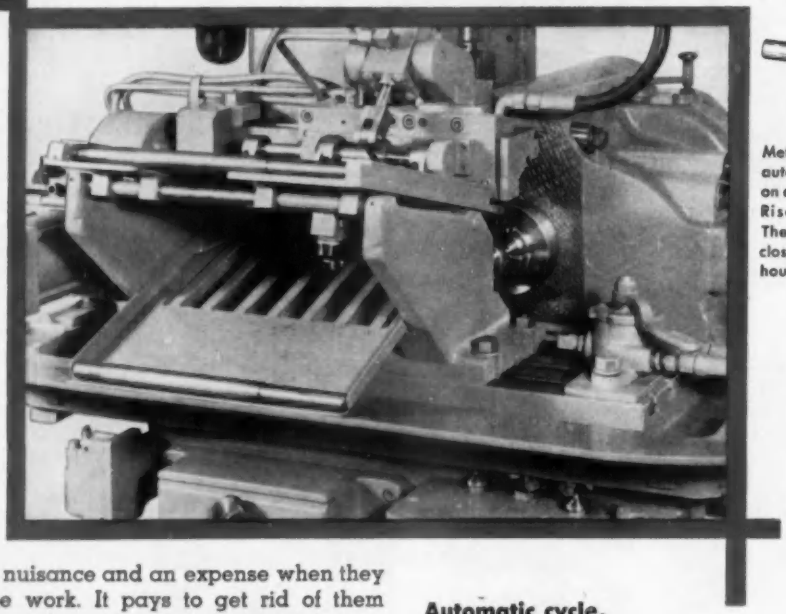
☐ *Complete hydraulic catalog of pumps and valves*

☐ *New information or data as published*

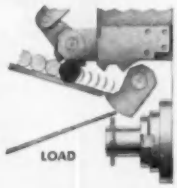
Name _____
Title _____
Company _____
Street _____
City _____ State _____

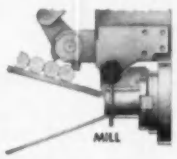
AUTOMATIC UPSIDE DOWN MILLING

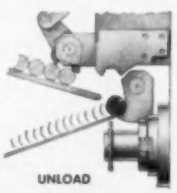
Clears the Work of Chips



Methods idea and one of 13 shafts automatically milled upside-down on a CINCINNATI No. 0-8 Automatic Rise-and-Fall Milling Machine. The fixture is shown in the above close-up. Production 200 shafts per hour, at 80% operator efficiency.





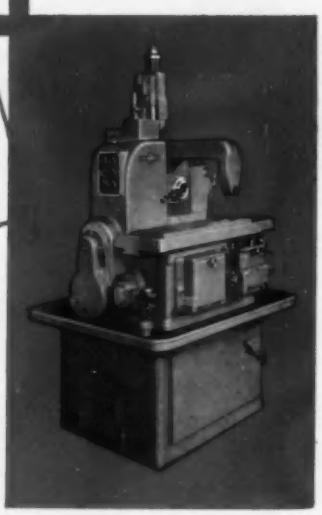


Chips are a nuisance and an expense when they litter up the work. It pays to get rid of them quickly, especially on automatic high production equipment like the Cincinnati Milling Machine illustrated here. It neatly performs an upside-down milling operation... the work comes clean and at a high rate of production. ¶ As you might suspect, this example of automation is the work of Cincinnati Application Engineers. They chose a CINCINNATI® No. 0-8 Automatic Rise-and-Fall for the job of milling keyways. The complete cycle is automatic, including loading, clamping and ejecting. Standard two-way feed cycle and automatic backlash eliminator are invaluable Cincinnati features in producing this job at the lowest cost. The feeding cut is the "climb" milling type, which aids in holding the work firmly in the V-locators and against an end stop. Thirteen different size shafts can be milled on this equipment. Want to know more about CINCINNATI No. 0-8 Automatic Milling Machines? Look in Sweet's for brief specifications; a post card will bring complete information. Ask for catalog No. M-1607-2.

Automatic cycle, synchronized by Cincinnati's exclusive Cycle Selector unit:

Rapid spindle carrier	.03 min.
Feed up to depth of ⅛"	.03 min.
Feed right 1½"	.15 min.
Rapid spindle carrier down	.03 min.
Rapid right and feed to position while simultaneously and automatically unloading and loading fixture	.06 min.
Total cycle time	.30 min.

CINCINNATI No. 0-8
Plain Automatic Rise and Fall Milling Machine
Catalog No. M-1607-2



THE CINCINNATI MILLING MACHINE CO.
CINCINNATI 9, OHIO

CINCINNATI

MILLING MACHINES • BROACHING MACHINES • CUTTER AND TOOL GRINDERS • METAL FORMING MACHINES
HARDENING MACHINES • OPTICAL PROJECTION PROFILE GRINDERS • CUTTING FLUID • GRINDING WHEELS

Free Literature

(*Continued from page* 372)

Brass Ingots 33

Brass and bronze ingots made by a new process are described in a 20-page illustrated brochure made available by *I. Schumann & Co.*

Flareless Fittings 34

Catalog 4320, 28 pages, gives details of flareless-type Ferulok tube fittings, suitable for heavy wall tubing. *Tube & Hose Fittings Div., Parker Appliance Co.*

Air Tools 35

Catalog 53, 84 pages, illustrated, is descriptive of a complete line of industrial air tools, including drills, grinders, hammers, impact wrenches, screwdrivers and nutsetters. *Thor Power Tool Co.*

Turner-Grinder 36

An eight-page bulletin describes the design features and lists general specifications of a precision turning and grinding machine. *Frauenthal Div., The Kaydon Engineering Corp.*

Molding Compound 37

A four-page folder gives data on Durez 13124 Black, a new medium-impact, phenolic molding compound. *Durez Plastics Div., Hooker Electrochemical Co.*

Lapping Machine 38

Catalog G-683, 12 pages, gives the characteristics of a centerless lapping machine for ultra-fine finishing operations. *Cincinnati Milling Machine Co.*

Panel Wiring 39

Bulletin S-301, eight pages, outlines new raceway techniques for wiring of electrical and electronic equipment. *Stahlin Brothers, Inc.*

Flat-Type Motors 40

Bulletin 3461, four pages, describes two flat-type, totally-enclosed motors, designed for the machine tool industry. *Diehl Mfg. Co.*

(*Turn to page* 378, *please*)

What's New

Removable manifold
Entire manifold removes in seconds—without tools!
Hinged water curtain
Swings up for easy skimming of entire collecting pan.
Complete water circulation
No dead ends to accumulate sediment.

Binks Style "E" Dynaprecipitor Water Wash Spray Booth

Built for easy maintenance
Manifold and front water curtain come out in seconds—without tools! Simplifies clean-up of manifold, upper wash chamber, rear water curtain and rear exhaust chamber. Hinged water curtain permits skimming of entire collecting pan without dismantling booth!

Built for low maintenance
Curved wash chamber surfaces prevent paint build-up. Complete water circulation system has no dead ends to accumulate sediment.

Needs less floor space
New design shortens depth of wash unit. Never before a booth with such maintenance ease.

Free descriptive bulletin
Ask your Binks jobber or industrial distributor for a copy of Bulletin DUE, or write direct to the address below.

Ask about our spray painting school
Open to all...NO TUITION...covers all phases

7050

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EVERYTHING FOR SPRAY PAINTING

SPRAY GUNS

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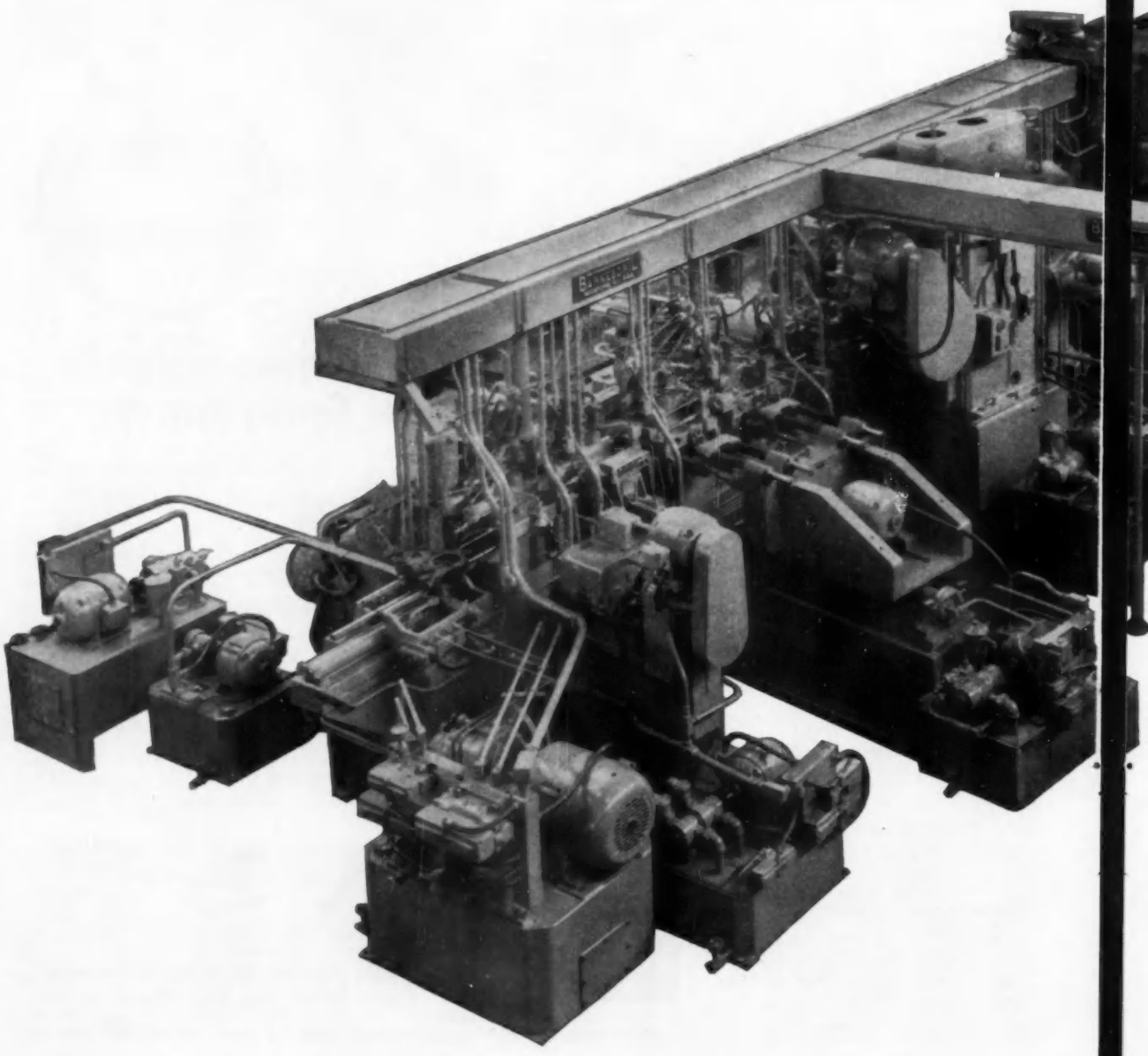
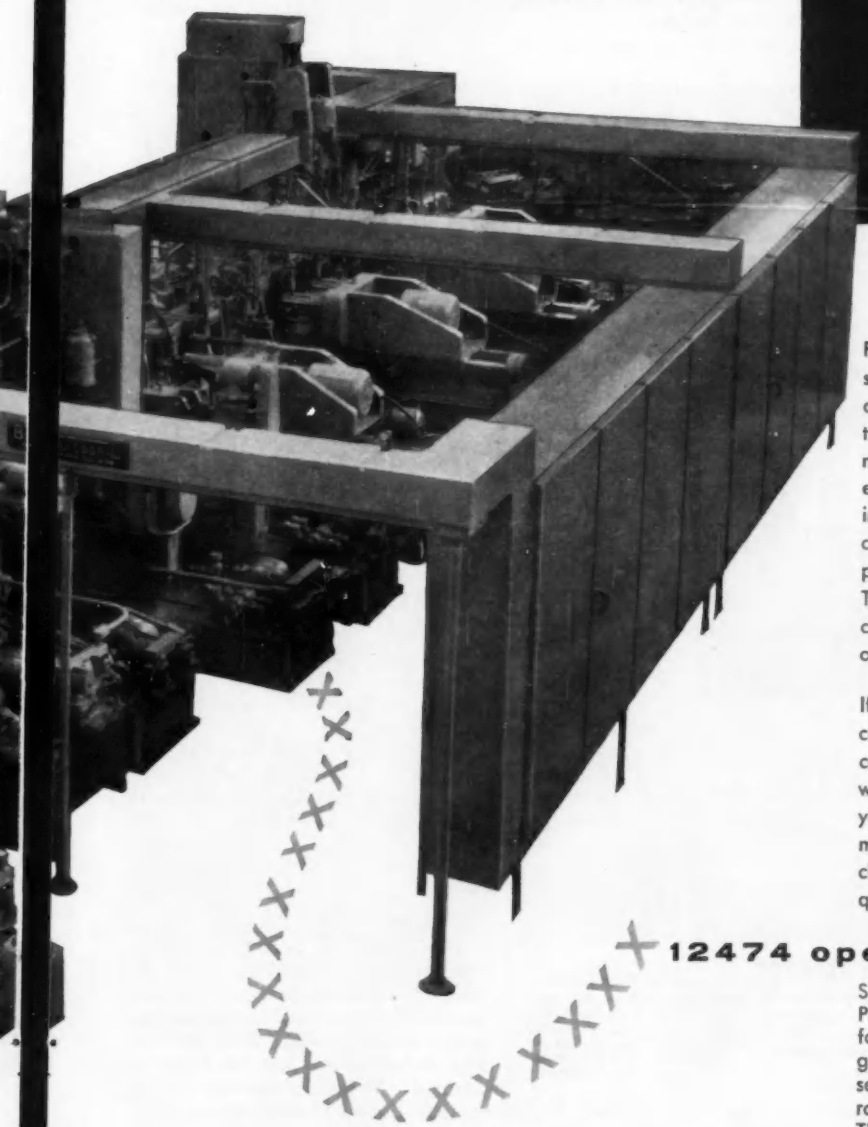
for automatic transfer-type production . . .

BARNESDRIL unit-machining multiplies



production efficiency



For multiple-operation machining of transmission housings, automobile blocks, compressor cases, appliance components, implement or tractor parts — BarnesdriL engineers combine machining operations-within-operations at each transfer station to produce the maximum in machining efficiency. Each unit-machining cycle is built around the most efficient approach to the particular production problem. That's why some BarnesdriL automation machines may have as many as 26 stations, while others as few as 6 or 7.

If you have automatic transfer-type production, contact a BarnesdriL automation engineer for counsel. He will make recommendations which will be helpful to your production, yet place you under no obligation. If you desire estimates on production with automated machining, he will furnish recommendations and quotation.

12474 operations per hour

Special 26-Station Automatic Transfer-Type Production Machine which drills, reams, bores, faces, taps, counter-bores, mills, chamfers, gages, presses in pins, and automatically assembles cast iron timing chain covers at the rate of 126 covers per hour, 80% efficiency. There are a total of 99 operations on each piece.

50th year

BARNES DRILL CO.

850 CHESTNUT STREET • ROCKFORD, ILLINOIS
DETROIT OFFICE: 3419 South Telegraph Road

Free Literature

(*Continued from page* 375)

Time Delay Relays 41

Bulletin SR-5R, four pages, contains information on a line of time delay relays, and includes a selection chart which gives terminal type, contact and terminal arrangement, and dimensions for five basic models. *A-G-A Div., Elastic Stop Nut Corp. of America.*

Pipe Fitting 42

A self-sealing fitting with integral Teflon insert, designed to eliminate pipe connection leaks without the use of compounds, is covered in an eight-page brochure issued by *Tru-Seal Div., Flick-Reedy Corp.*

Copying Lathe 43

The design of an automatic multi-cycling copying lathe and typical parts applications are given in a six-page folder issued by *Cone Automatic Machine Co., Inc.*

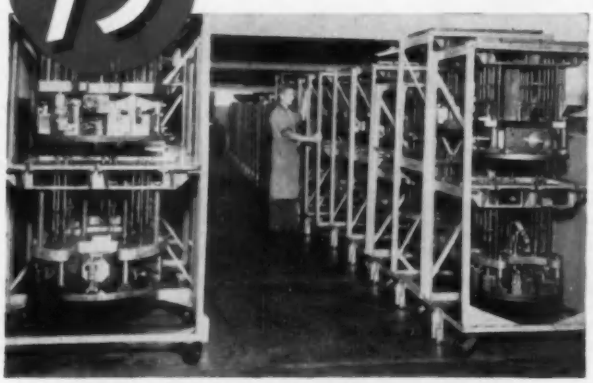
Resistance Welding 44

Bulletin GEA-5945A, eight pages, discusses synchronous precision control for resistance welding, and lists typical applications. *General Electric Co.*

Stainless Processing 45

Catalog SD-24, four pages, presents a cross-section sampling of facilities available for brazing and processing stainless steel, as well as titanium and aluminum alloys. *Stainless Processing Div., Wall Colmonoy Corp.*

75 SEIBERT-EQUIPPED Machine Heads at WOODWARD GOVERNOR COMPANY



Simplify Tooling Changeovers . . . Help Build Precision Parts Faster

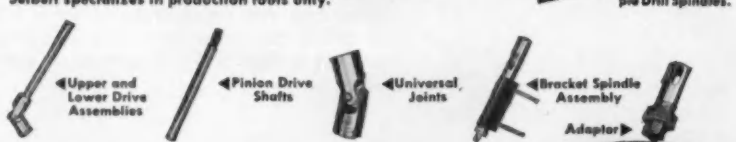
At Woodward Governor Co., Rockford, Ill., an ingenious method of machine head storage reduces setup time and minimizes damage to spindles and tools. The main illustration above shows how 75 interchangeable heads, equipped with more than 1500 Seibert precision-built spindles, are neatly arranged and numbered to permit fast and easy removal in and out of storage to machine location. Woodward Governor, another company whose production requires precision tolerances and high quality, has been using Seibert tools for more than 5 years.

3 Reasons Why Users Specify SEIBERT

Investigate the 3 reasons why users specify Seibert tools. You will find they meet exacting tolerance requirements . . . you save money for Seibert tools are let produced in a wide range of standard sizes . . . and your orders receive prompt handling because Seibert specializes in production tools only.

FREE DATA

Write for Folio 1-50 illustrating and describing the complete line of Seibert Multiple Drill Spindles.



SEIBERT & SONS, INC. 1008 E. 24th STREET CHENOA, ILLINOIS

Quality MULTIPLE DRILL SPINDLES AND PRODUCTION TOOLS

SEIBERT

Tool Steel 46

Bulletin 14-14, four pages, describes an oil-hardening tool steel meeting AISI-SAE-02 classification, and gives typical analysis, heat treatment, and forging practice. *Joseph T. Ryerson & Son, Inc.*

Vinyl-Clad Metal 47

New processes for laminating and fabricating vinyl-clad metal, and products for which vinyl metal laminate can be used, are described in a brochure made available by *Arvin Industries, Inc.*

Sockets

Catalog 129, eight pages, lists fast lead sockets, designed for high-speed nut running; and surface drive sockets, designed for use in applications where perfect alignment of socket and nut or bolt is not always possible. Address request on company letterhead to *The Apex Machine & Tool Co., 1043 So. Patterson Blvd., Dayton 2, Ohio.*

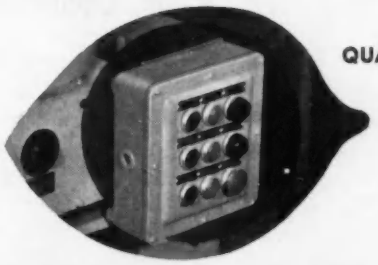
Spring Design

The completely revised edition of "Handbook of Mechanical Spring Design," an 84-page manual, explains the principles of spring design, and gives fundamental formulas for stress and deflection for various types of springs. Write on company letterhead to *Associated Spring Corp., Bristol, Conn.*

Lathes

Bulletin 1603, 16 pages, covers a new series of heavy-duty lathes that feature automatic calculation and setup of spindle speeds. Address request on company letterhead to *Monarch Machine Tool Co., Sidney, Ohio.*

The "eagle eye" department...



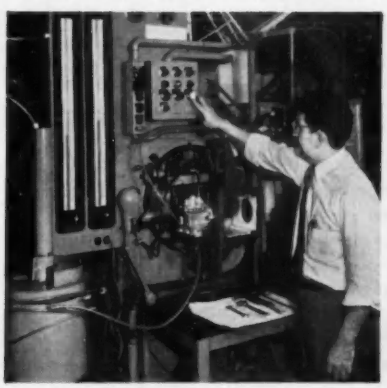
QUALITY CONTROL: One department is responsible for the quality in every one of AC's Quality Products. Here is a step-by-step story behind the quality control of one AC product — the fuel pump. The fuel pump is used as an example because it is the heart of a car's engine and literally millions of drivers unknowingly rely upon this device for dependable transportation.

PARTS INSPECTION — Quality control begins with a rigid inspection of representative groups of component parts. Careful screening at this point reduces later rejection of completed assemblies to a minimum.

VALVE SORTING — Valve-sorting machine gives pressure check to 100% of all valves used in AC Fuel Pumps. Valves are accepted or rejected automatically . . . and graded within narrow limits, thus eliminating human error.

LABORATORY — The AC research laboratory maintains a constant watch over critical diaphragm materials, checking thread count, tensile strength, weight, sizing, moisture, pressure, flexing and solubility for each roll of cloth.

FINAL TEST STAND — 100% of fuel pump production goes through the final test stand where each pump is thoroughly checked for prime and pressure under conditions comparable to actual engine operations.



FUNCTIONAL TEST STAND — This is the ultimate check . . . used for all first-run pumps and for complete analysis wherever indicated. Prime, pressure and capacity for both liquid and vacuum are carefully analysed.

LIFE TEST — Random samples are withdrawn from production and run under carefully controlled laboratory conditions until breakdown occurs as a final check on quality, performance and life of the product.

RESULT: AC's unique record of millions upon millions of trouble-free fuel pumps is in itself testimony to the effectiveness of AC's inspection and quality control. What is true of fuel pumps is also true of other quality products produced by AC. Specify them . . . ask for them. Their uniform high quality and remarkable dependability will make you glad you did.

AC

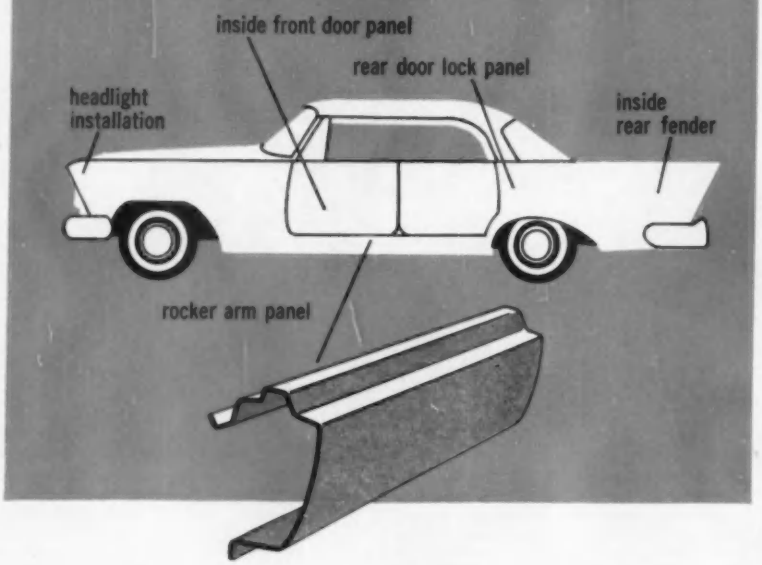
AC SPARK PLUG THE ELECTRONICS DIVISION OF GENERAL MOTORS

FLINT — 1300 North Dort Highway • CHICAGO — Insurance Center Building • DETROIT — General Motors Building

QUALITY PRODUCTS

NOW! a weldable corrosion-resistant coating

Zincilate 400



IT'S NEW! Zincilate 400 was used first by the automotive industry on the late 1956 models.

IT'S PROVED! Zincilate 400 is now being used by more manufacturers, in more crucial areas, on the 1957 models.

IT'S EXCLUSIVE! Only Zincilate 400 can be applied before fabrication, then welded, minutes or months after application. You'll get fast, clean work — anytime — when you weld over a Zincilate 400 coating, because it retains its conductivity and contains no chemicals to contaminate electrodes. And, note this — Zincilate 400 provides galvanic protection, even at the point of burn-off, that keeps corrosion shackled.

You can use Zincilate 400 on your product, applying it as the automotive people do, by spray, brush or dip, before fabrication and welding. Your product, if it's made of metal, will be protected — always — by Zincilate 400.

Cost? You'll find many coatings with a lower first cost. But overall costs, where it really counts, are lowest when you're using Zincilate 400. If you'll outline your problem, we'll be happy to tell you just what you can expect of Zincilate 400—and there's no obligation.

Zincilate

CORROSION-RESISTANT, ABRASION-RESISTANT, WELDABLE, AIR-DRIED and BAKED PROTECTIVE COATINGS

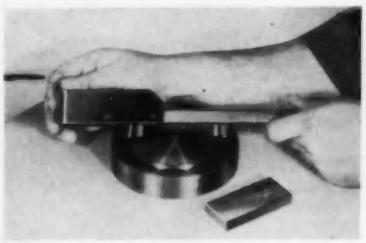
INDUSTRIAL METAL PROTECTIVES, INC., 403 HOMESTEAD AVE., DAYTON 8, OHIO

New Production and Plant Equipment

(*Continued from page* 298)

Indicator Gages

ADJUSTABLE indicator gages developed specifically to facilitate accurate measurement of critical dimensions of shallow slots, grooves and holes, have been introduced. Called Shalo-Chek, the new gage is only 1 13/16-in. high and can be used at the machine for checking depths ranging from 1/32 to ½-in., in most



Ellstrom Shalo-Chek indicator gage

cases without disturbing the setup. Three standard models are available ranging from ½ to 6 in., 4 to 12 in., and 10 to 18 in.

The gages can be used with No. 1 AGD standard dial indicators, or with any air gage instrument by means of an adapter block and a contact air cartridge. Each model is furnished complete in its own case, which includes a pair of carbide contact gaging fingers, and adapter block for OD checking, and five sets of rest buttons to gage at depths of 1/32, 3/32, 5/32, 7/32 and 9/32-in. *Ellstrom, Inc.*

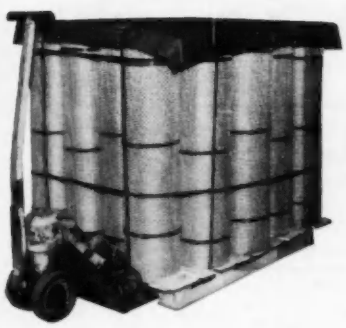
Circle 59 on postcard for more data

Transfer Machines

THE standard Trans-O-Mator series of straight-line transfer machine bases has been redesigned to widen the range of application and simplify adjustments and maintenance. They are now available with strokes of either 6, 8, 12, 16, or 24-in., and with a choice of two types of carriers in various sizes. Standard lengths are 10, 14, and 18 ft; other lengths can be provided by increasing or decreasing the span between end castings.

Carrier chain tension can now be adjusted by either a screw take-up method, whereby tightening a single screw moves an entire end section of the upper frame, or by a spring-

(*Turn to page* 383, *please*)



How **REYNOLDS** packs new savings into wire cloth shipments

• Palletized packaging for wire cloth, successfully developed by the Reynolds Wire Division of National-Standard, is now saving customers plenty of time and dollars.

Note in the photographs how rolls of slit and full width material are both mounted on non-returnable pallets. Advantages and savings accrue all along the way.

For example, there's far less chance of damage in shipment. And think how much faster, easier, these unit loads can be handled on arrival . . . in and out of storage . . . and right to production operations.

So chalk up another extra for Reynolds' service . . . and find out what this new packaging method can mean to you! Find out, too, what Reynolds means by quality control and uniformity in wire cloth manufacture. It pays.

NATIONAL NS NATIONAL-STANDARD Company **STANDARD**

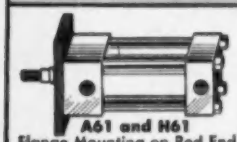
DIVISIONS: NATIONAL-STANDARD, Niles, Mich.; *tire wire, stainless, music spring and plated wires* • WORCESTER WIRE WORKS, Worcester, Mass.; *high and low carbon specialty wires* WAGNER LITHO MACHINERY, Secaucus, N. J.; *metal decorating equipment* • ATHENIA STEEL, Clifton, N. J.; *flat, high carbon spring steels* • REYNOLDS WIRE, Dixon, Ill.; *industrial wire cloth*

over 8,000 Different Cylinder SELECTIONS—

Miller AIR AND HYDRAULIC CYLINDERS AND BOOSTERS "IN STOCK" for immediate delivery...

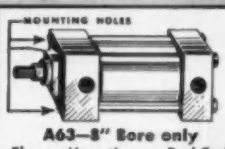
See Miller Bulletins A-105K(Air) and H-104K(Hydraulic) for Complete Dimensions and Engineering Data on these "in-stock" sizes and other Custom Miller Cylinders in bores up to 20" and strokes up to 22 feet.

"IN-STOCK" MODELS "A" Signifies Miller 200 psi Air Cylinders; "H", 2000 psi Hydraulic Cylinders. Interchangeable Mountings Are Shown In Red On Drawings.



A61 and H61 Flange Mounting on Rod End (A61 not available in 8" bore)

A62 and H62 Flange Mounting on Cap End (A62 not available in 8" bore)



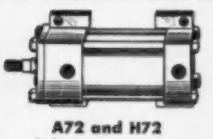
A63—8" Bore only Flange Mounting on Rod End

A64—8" Bore only Flange Mounting on Cap End

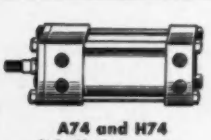
A50 & H50—Tie Rods not extended beyond nuts.
A51 & H51—Tie Rods extended both ends (shown).
A52 & H52—Tie Rods extended. Cap End only.
A53 & H53—Tie Rods Extended. Rod End only.
A54 & H54—Two Tie Rods extended at both ends.

H65—Hydraulic Only Flange Mounting on Rod End

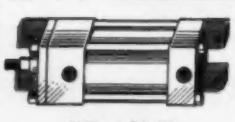
H66—Hydraulic Only Flange Mounting on Cap End



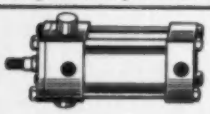
A72 and H72 Side Lug Mounting



A74 and H74 Side Flush Mounting

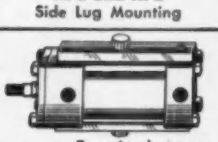


A77 and H77 Side or Foot Mounting

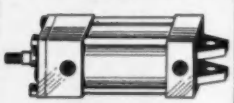


A81 and H81 Trunnion Mounting on Rod End

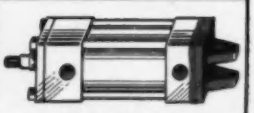
A82 and H82 Trunnion Mounting on Cap End



A83 and H83 Trunnion between Head and Cap (one week delivery)



A84 and H84 Pivot Mounting



A86 and H86 Pivot Mounting

IN STOCK BORES in Inches

	BORES	ROD DIA.	ROD TURN DOWN & THREADS	"IN-STOCK" STROKES (in Inches)																					
AIR	1½	⅝"	7/16-20	Cushioned			3	4	5	6	7	8	9	10	11	12									
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12									
	2	⅝"	7/16-20	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	2½	⅝"	7/16-20	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	3¼	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	4	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	5	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	6	1⅜"	1-14	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	8	1⅜"	1-14	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
HYDRAULIC	1½	⅝"	7/16-20	Cushioned			3	4	5	6	7	8	9	10	11	12									
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12									
	2	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	2½	1"	¾-16	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	3¼	1⅜"	1-14	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	4	1¾"	1¼-12	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
	5	2"	1½-12	Cushioned			3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36
				Non-Cush.	1	2	3	4	5	6	7	8	9	10	11	12	14	16	18	20	22	24	28	32	36

① "A" and "H" Models 82, 84 and 86 with strokes over 18" require stop tubes.

Column strength requires larger diameter piston rods for the following:

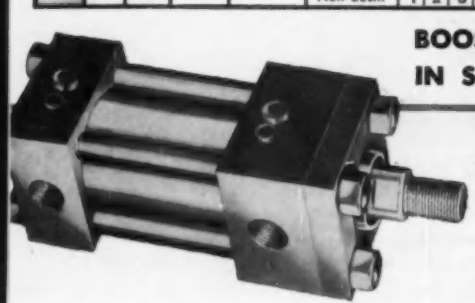
Air Cylinder Models A82, 84, and 86 with strokes inside area (1), when operated at 100 psi and over;

All hydraulic models with strokes inside area (2) and Models H82, 84, and 86 with strokes in area (4), when operated at 2000 psi and over;

Models H82, 84 and 86 with strokes inside area (3), when operated at 1000 psi and over.

Depending upon Trunnion Pin location, "A" and "H" Models 83 with standard diameter piston rods can have longer strokes than Models 82, 84 and 86.

See Miller File #251 for oversize piston rod and stop tube requirements.



BOOSTERS IN STOCK

Immediate Delivery on the following Miller 25 to 1 Ratio Boosters (80 psi air input produces 2000 psi hydraulic oil output): Model B4, 5" bore, 1" dia. ram, 6" and 12" strokes; Reciprocating Booster Model DA77-RBA8, 5" bore, 1" dia. ram, 6" stroke. Also Booster Tanks, 5" dia., 6" and 10" heights.

Write For Catalog and Stock Price List

Miller

MILLER FLUID POWER DIVISION FLICK-REEDY CORP.

2028 N. HAWTHORNE AVE., MELROSE PARK, ILL.

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

New Production and Plant Equipment

(*Continued from page* 380)

mounted mechanism that automatically compensates for chain stretching. The power section, composed of a standard two horse power gearmotor, electric clutch-brake combination and cam indexing mechanism, is mounted as a single unit and easily removed from the machine if necessary. Additional tool mounting surfaces have been provided on top and sides of the machine.

The new standard control panel contains an electrical interlock between the indexing and tooling power supply, as well as start, stop and jog controls, indicator lights and provisions for automatic scanning devices. The panel permits either adjustable timer controlled cycle or sequential operation of tooling and transfer movement.

As with earlier models, indexing is accomplished with a roller gear drive. The drive employs a modified trapezoid acceleration characteristic with an initial force of zero and a gradual increase to a low maxium acceleration value. *Ferguson Machine Corp.*

Circle 60 on postcard for more data

Welding Unit

CONSISTING of a welding control and electrode drive device, and interconnecting gas, water and cable assemblies, a semi-automatic welding unit just announced facilitates CO_2 and inert-gas arc welding. Its function in consumable electrode welding is to feed the electrode into the arc at a constant, preselected speed. It provides a means for starting and stopping the arc, adjusting the electrode feed speed, "inching" the electrode, controlling the arc welder power, and controlling the flow of shielding gas—automatically and in proper sequence.

Dual control is provided to save the operator time and steps between the welding operation and the source of welding power. Both wire feed speed and arc voltage are controllable at the work. The unit is designed for use with the company's "Powromatic" constant voltage type welder. *Hobart Brothers Co.*

Circle 61 on postcard for more data

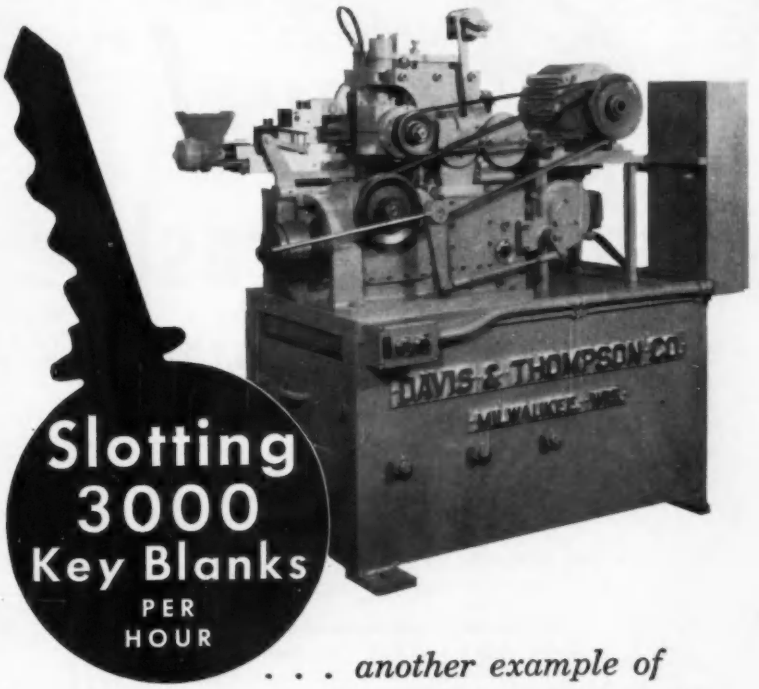
Hobart MIG welding nuit

Impact Wrench

MANUALLY-OPERATED, an impact wrench has been introduced which is said to deliver torque values up to 20 times that applied to the handle by the operator.

Called the Swench, it has two drive extensions, one for loosening and one for tightening fastenings, and is operated like an ordinary ratchet wrench, using standard sockets to engage the nut or bolt head. As the handle is pulled, a spring and rotor mechanism delivers rotary impacts. One impact

(*Turn to page* 384, *please*)



Slotting 3000 Key Blanks PER HOUR

. . . another example of
Davis & Thompson Production Engineering

If you need high production in milling, drilling, boring and similar metalworking operations . . . with a minimum of equipment and capital expenditure, call in a Davis and Thompson Representative.

This key blank slotting machine is only one of countless machining problems solved by D & T Engineers.

Space does not permit describing this machine in full detail, but if you would like complete details, write.

ADDITIONAL INFORMATION

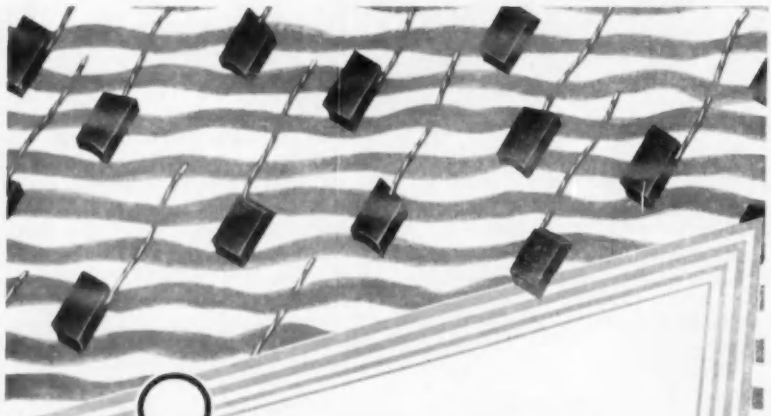
Get the complete story of the facilities available from Davis and Thompson. Write for this 8-page bulletin today. Ask for Bulletin 1002.

Roto-Matic

Davis and Thompson Co.

4460 N. 124th ST. . . . MILWAUKEE 10, WISCONSIN

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS



Now!

Long-Life Brushes

FOR FUEL PUMP MOTORS

Meet the first truly long-life brushes for 12-volt fuel pumps!

Typical of Stackpole brushes designed for specific operating conditions, these new units combine excellent commutation with long life in gas fume-laden atmospheres or immersed in gasoline, which prohibit proper commutator filming by conventional brushes.

Stackpole's chief stock in trade is its ability—based on half a century's experience—to match brush grades to on-the-job operating conditions.

The fact that more cars on the road today use Stackpole ignition system brushes than any other make offers additional evidence along these lines.

STACKPOLE CARBON COMPANY
St. Marys, Pa.

STACKPOLE

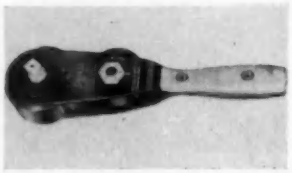
50 Years of Carbon-Graphite-Metal Powder Progress

Other Stackpole products include: Electrical CONTACTS • CERAMAGNET® Ceramic MAGNETS • VOLTAGE REGULATOR DISCS • SEAL RINGS • PUMP VANES • FRICTION SEGMENTS • CARBON BEARINGS • MOLDS and DIES • WELDING and BRAZING CARBONS • FIXED and VARIABLE RESISTORS and many more.

New Production and Plant Equipment

(*Continued from page* 383)

is delivered for every 30 deg of movement of the handle. Each impact produces a clearly audible sound so that the number of impacts may be easily counted. Control of the force delivered by each impact is achieved by the settings of an indicator on the head



Swench hand-operated impact wrench

of the spring arbor. Through the combination of force control and the number of impacts applied, the desired tension is obtained. Charts are furnished which indicate proper spring settings and number of impacts required to produce desired tensions in various bolt sizes.

The wrench is presently available in three models. Model 500 fits ½-in. sockets and takes a range of bolts through ¾-in. Model 750 fits ¾-in. sockets and is for bolt sizes from ½-in. through 1¼-in. The Model 1000, designed for 1-in. sockets, is for bolt sizes up to 1-¾-in. *Swenson Engineering Co.*

Circle 62 on postcard for more data

Lift-Truck Units

TRANSPORTER operator-led electric-driven industrial trucks are now available equipped with combination battery and charger units, according to a recent announcement. By plugging into any 110/120-v, 60-cycle a-c lighting circuit, the battery can be recharged whenever the truck is idle. Material savings in capital investment in batteries and chargers, as well as in installation costs, are claimed. The necessity for a central charging point is eliminated, representing savings in operator travel time. The Transporter with battery-charger combination is said to be ideal for single-shift operation. If the battery is fully discharged, it can be recharged in 10 to 16 hours. No attendant is needed as the charger automatically reduces its rate at the finishing end. *Automatic Transportation Co.*

Circle 63 on postcard for more data

(*Turn to page* 386, *please*)

BETTER SUSPENSION...

...for that NEW BABY of yours!

Your next model, now in the planning stages, will be by far the best you've ever built. Naturally, you'll do *everything* to surpass the best you've ever produced before.

But how about suspension? New advances in the design and engineering of *steel springs* can accomplish what seemed impossible a year or two ago. Better metals. Controlled tempering. Scientific methods. For load balance, controlled sidesway and rebound, positive alignment and structural strength, TODAY'S springs by BURTON can work wonders.

Consult our engineering staff . . . *early!*

"Vital Support to the Automotive Industry"

BURTON SPRINGS

FOR MOTOR CARS • TRUCKS • BUSES • TRACTORS • TRAILERS • OFF HIGHWAY EQUIPMENT

BURTON AUTO SPRING CORPORATION . . . WESTERN AVENUE AT 48th STREET
CHICAGO 32, ILLINOIS

New Production and Plant Equipment

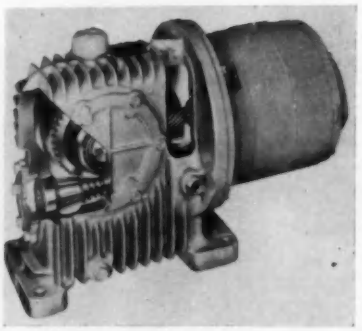
(*Continued from page* 384)

Gearmotor Line

COMPACTNESS, high capacity and long life are featured in the introduction of a line of right-angle worm gearmotors. They are offered in both standard extended shaft and shaft-mounted models, permitting a wide installation variation. Standard NEMA D-flange motors are used, and gearmotors are available with or without motors as desired. Four different sizes are currently available to handle fractional to 15 hp motors. This range is now being extended to 40 hp.

The units are obtainable in 28 standard output speeds from 6.25 rpm to 525 rpm (which includes all standard AGMA output speeds).

These gearmotors are double reduction units with a double-enveloping worm gear secondary and a helical primary. This design is said to be noted for its high load-carrying capacity on small center distances; and that as a result, for equal load capacity, the gear-motors call for smaller housings with higher housing strength. Housings have heavy walls internally reinforced with heavy ribbing for maximum rigidity. Another characteristic is the extensive use of cooling fins, which provide both cooling area and housing reinforcement.



Cutaway of Cone-Drive gearmotor

A stated advantage of the gearing is that neither ratio nor number of teeth affects the total contact area or strength of the gearing. All teeth within an arc of 45 deg on the gear are in simultaneous contact with threads on the worm. If the gear has 24 teeth, there will be 3 teeth in contact. If the number of teeth is doubled, each tooth will be half the size and there will be 6 teeth in contact (⅛ the total number at all times). Since there are twice as many teeth, each with half the contact area, the total contact area, total load capacity and total strength are unchanged. This high number of teeth in contact is said to be responsible for the smoothness of operation of the gearing. It also reduces wear and resulting maintenance costs by spreading the load over a greater area. *ConeDrive Gears, Div. Michigan Tool Co.*

Circle 64 on postcard for more data

Bevel Gear Chuck

FEATURING a rotating ball locator pin, a bevel gear chuck recently developed has been designed to reduce costs in the manufacture of bevel gears, while increasing quality. It is a self-contained unit with cylinder and mounting plate.

The chuck incorporates a locating pin which has a free rotating contact ball automatically adjusting to a new contact point with each loading and unloading of work. Replacement of

(*Turn to page* 388, *please*)

GOSHEN
GORSIL*
*Trade name for Silicone Rubber compounds custom-formulated by Goshen Rubber Co., Inc.

when it comes to SILICONE RUBBER PARTS (molded, lathe-cut or metal bonded) from CUSTOM-FORMULATED COMPOUNDS come to Goshen Rubber

MOLDED
LATHE-CUT
BONDED-TO-METAL

A wide selection of specification-standard and custom-formulated silicone rubber compounds are at your command for precision fabrication by Goshen of products requiring properties like these:

- Resistance to temperature extremes, −80° to +500°F.
- Resiliency over a range of −120°F to +600°F.
- Low compression set.
- Resistance to chemicals, oils, oxidation, ozone, weathering, moisture, fungus, corrosion, shock, abrasion.
- Freedom from stain, odor, tackiness and toxicity.
- Same shrinkage as organic rubbers, with resultant advantages.

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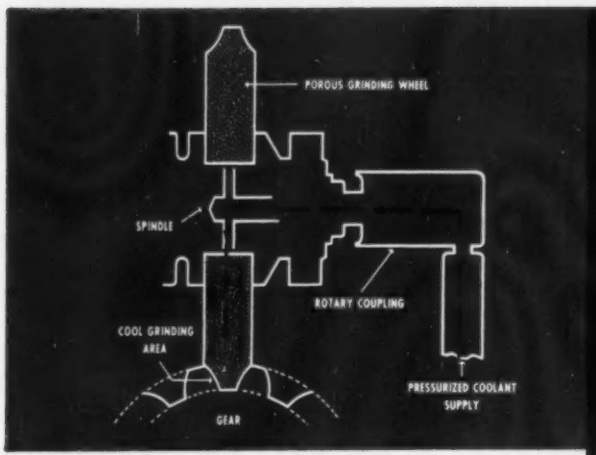
This 8-page brochure and technical bulletins tell how you can put Goshen Rubber to work for you. Send for your free copies today!

See our catalog in Sweet's Product Design File.

PUT Goshen Rubber TO WORK FOR YOU
GOSHEN RUBBER CO., INC., 2737 S. TENTH ST. GOSHEN, IND.

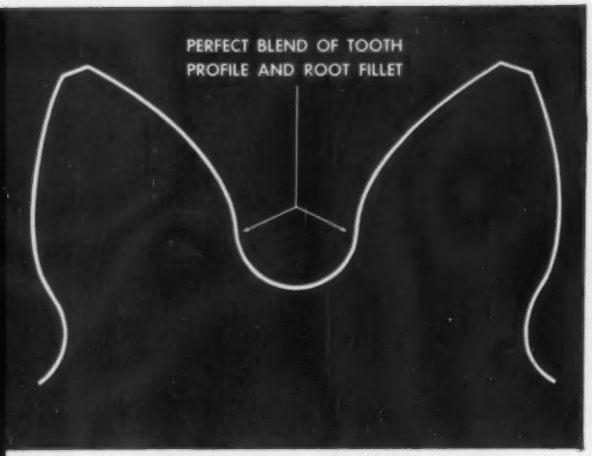
These Unique Features

MAKE PRECISION GRINDING OF GEARS MORE PROFITABLE THAN EVER BEFORE



NON-TEMPERED, CASE-HARDENED GEARS

A controlled flow of coolant through the grinding wheel is supplied to the area between the grinding wheel and the gear tooth. This feature, coupled with the automatic down feed, virtually eliminates surface tempering and grinding checks.



PERFECT BLENDING OF FILLET AND PROFILE

Single or double diamond trimmers are used to assure a perfect blend between the tooth profile and the root fillet. This eliminates stress risers at the critical section of the tooth.

Pratt & Whitney's J-57 Turbojet: The most powerful aircraft production engine in the world is rated in the 10,000-pound thrust class.

19 Gear Grind Machines are used in the production of the Pratt & Whitney J-57

At Pratt & Whitney Aircraft, where finest quality gears and high production are essential to the manufacture of the J-57 Turbojet, 19 new automatic Gear Grind Machines are in daily use. Here is what Pratt & Whitney has to say:

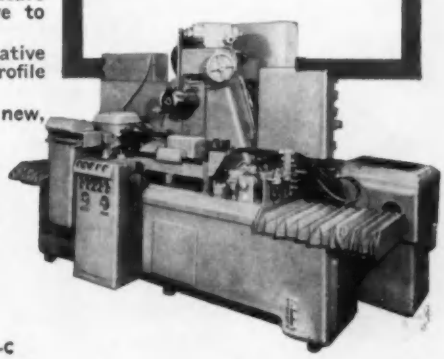
"The new Gear Grind Machines presently used in the aircraft engine division are the first major development in this type of machine since their use at Pratt & Whitney. They were developed in cooperation with Pratt & Whitney engineers to meet the specific and exacting requirements of modern aircraft engine gears. These machines are equipped with a new wheel-trimming feature and a two-speed spindle drive to eliminate burning.

"Another advantage is the relative ease with which the involute profile can be modified."

Write today for Gear Grind's new, comprehensive brochure.

These Advanced Features Are Also Available:

- Simplified modification of the involute gear tooth profile.
- Automatic trimming of the grinding wheel assures uniformly accurate work.
- Available as fully automatic machines incorporating automatic loading and unloading.



THE GEAR GRINDING MACHINE COMPANY

3903 CHRISTOPHER, DETROIT 11, MICHIGAN

Manufacturers of:
The Detroit Screwmatic 750, Automatic Screw Machine.
RZEPPA ("Sheppa") Constant Velocity Universal Joints.

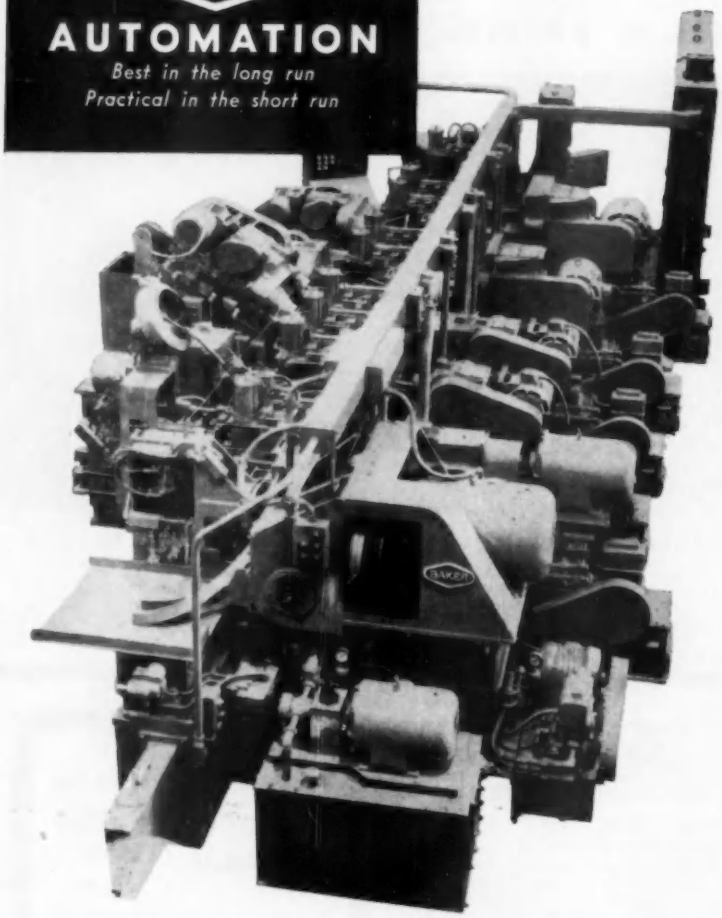
56-C

(*Turn to page 388, please*)

BAKER

AUTOMATION

Best in the long run
Practical in the short run



THIS BAKER SPECIAL

ups production to 75 main bearing cap assemblies per hour.

Operations are: drill, ream, mill, tap, assemble dowels, and separate — all automatic.

OLD TIMERS' CORNER

Remember when Baker made nothing but gear-feed drilling machines? Quite a contrast with modern Baker specials — the bulk of Baker output today.

BAKER BROTHERS, INC.
Dept. AI-357, Toledo 10, Ohio

Send me data on automation with
☐ Baker Specials . . . ☐ Baker *standard* machines.

NAME AND TITLE

COMPANY

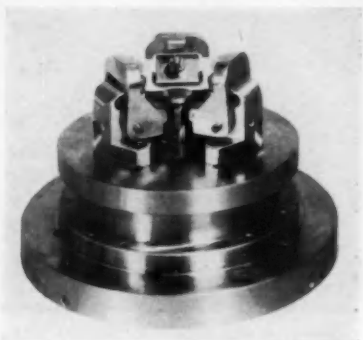
ADDRESS

CITY ZONE STATE

New Production and Plant Equipment

(*Continued from page 386*)

complete locator pins has now, it is said, been made almost obsolete since if a ball should wear down to the point of no use it is only necessary to insert a standard steel ball at low cost. Quality standards are also



Splinemaster bevel gear chuck

better maintained by eliminating the need for manually rotating the pins.

The chuck body is constructed for locking pin holding blocks in a variety of positions to provide for part changes. It is said the chuck can be used for either OD or ID operations with equal efficiency. During ID operations, when clamping is desired on the outer face of the gear, it is possible to fasten directly over the contact points. *Splinemaster Products Co.*

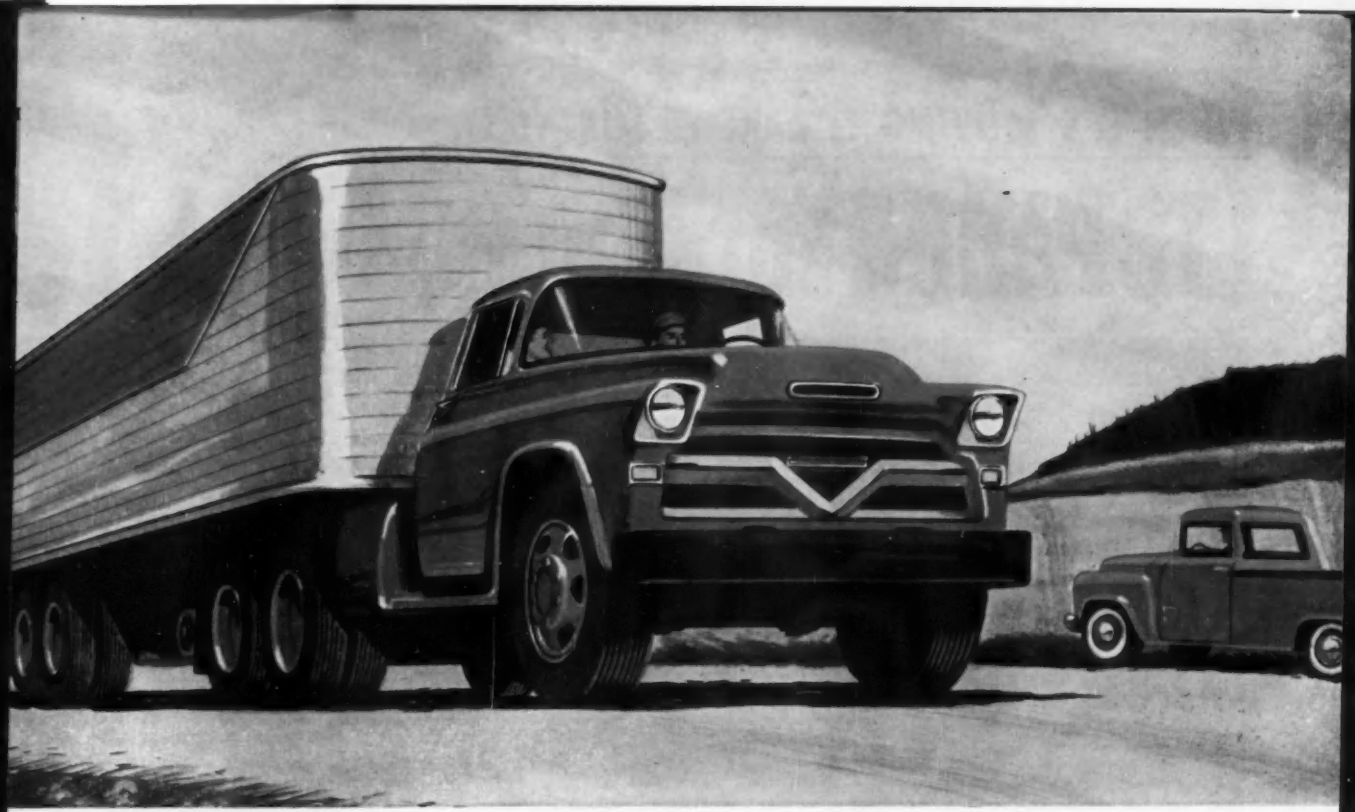
Circle 65 on postcard for more data

Plastic Dispenser

PRODUCED for dispensing epoxy and polyester resins and hardeners for application in fiber glass fabricating operations, a plastic metering device

Auto-Air plastic dispenser

(*Turn to page 392, please*)



Why nearly half of today's trucks use engine control systems by Holley

Maximum power at minimum cost. This is the reason more than half of America's major truck manufacturers — among them Ford, GMC, International Harvester and White — factory-equip their engines with control systems by Holley.

For over fifty years Holley has built carburetors, distributors and other engine components integrally designed to provide top performance at lowest operating cost. The now-widely-used 4-barrel carburetor with governor, for example, is one of a number of Holley engineering firsts originally designed, developed and manufactured by Holley for the trucking industry.

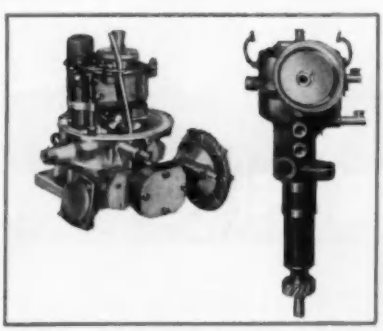
Truck, automobile and aircraft engine producers have proven that wherever engine control systems are needed—for main or auxiliary motors—Holley's half century of design, engineering and manufacturing experience sets the standard.

When your requirements call for maximum engine performance at minimum operating cost, specify Holley engine control systems. Many aircraft manufacturers; more than ten million automobiles; and over half of the nation's leading truck producers do.

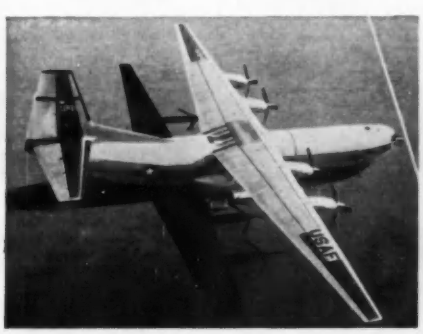
HOLLEY
Carburetor Co.

11955 E. Nine Mile Road, Van Dyke, Michigan

For more than half-a-century—original equipment manufacturers for the automotive industry.



IN TRUCKS—manufacturers combine Holley's carburetor, distributor and governor for an integrally-designed control system providing maximum power and economy.



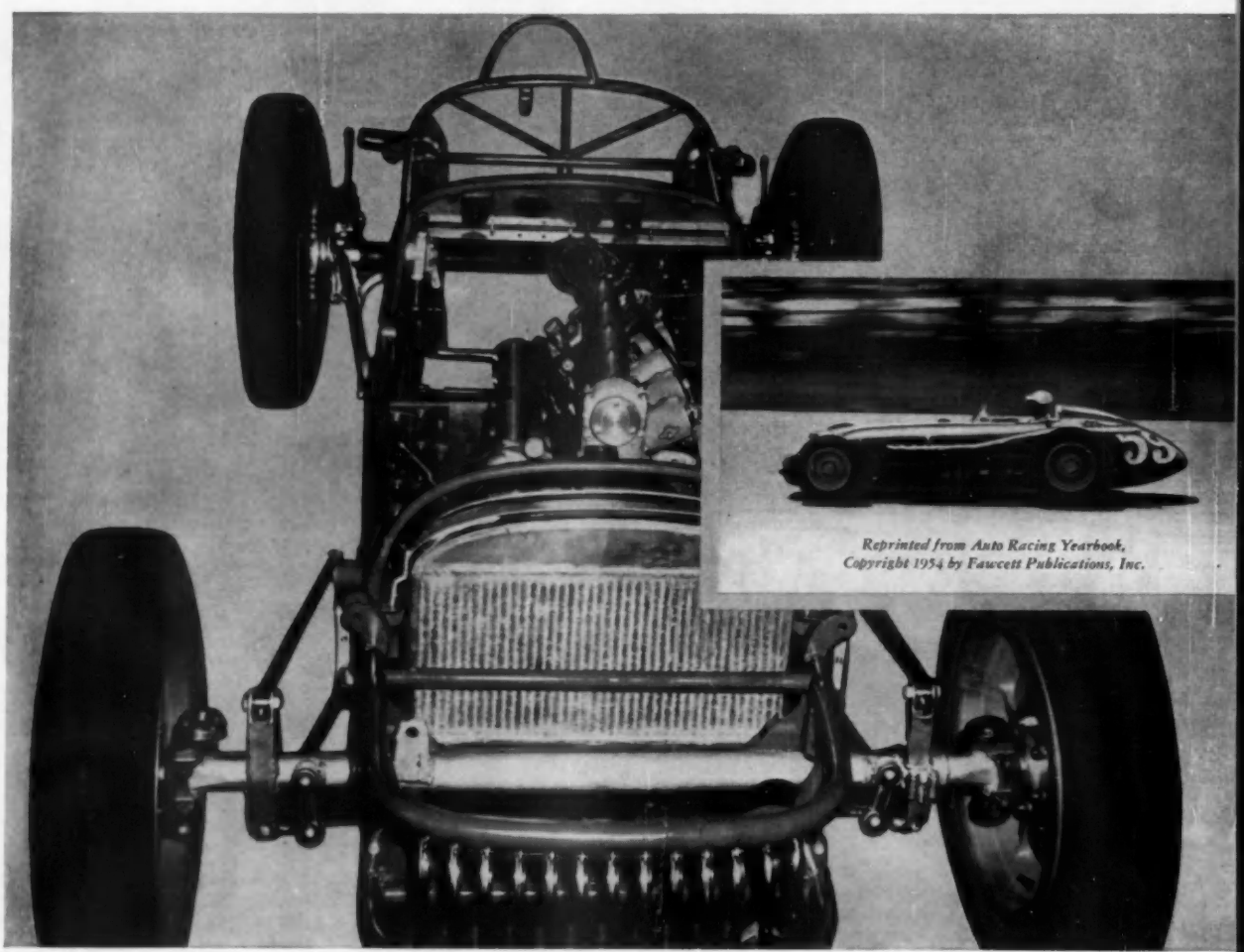
IN PLANES — specially-designed power control systems and other precision parts by Holley contribute greatly to safe flying by making many necessary engine adjustments automatically.

IN AUTOMOBILES—more than ten million of them now on the road are using carburetors, distributors, heat regulators designed by Holley for finest performance.

(Turn to page 392, please)

WHEN IT'S *MOVING*...MAKE IT *TUBING*

Pound for Pound, Tubular



The body frame of this high-performance racing car is fabricated from steel tubing to obtain maximum strength at reduced weight.

REPUBLIC

REPUBLIC STEEL

World's Widest Range of Standard Steels

ley's carburetor, distributor and governor for an integrally-designed control system providing maximum power and economy.

systems and other precision parts by Holley contribute greatly to safe flying by making many necessary engine adjustments automatically.

of them now on the road are using carburetors, distributors, heat regulators designed by Holley for finest performance.

Construction is STRONGEST!

That's why racing-car designers and builders fabricate body frames from steel tubing. A combination of high speed and rugged endurance demands a framework that is both lightweight and strong.

They know that at any given weight, tubing is the strongest of all mechanical shapes—stronger in torsion, stronger as a beam, stronger under compressive loads.

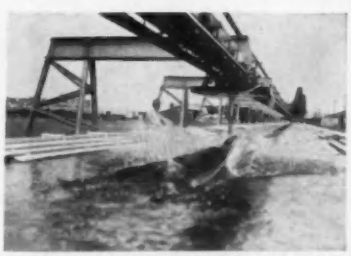
When it comes to a choice, remember: The most economical steel mechanical tubing, dollar for dollar, is Republic ELECTRUNITE®, the *original* electric resistance welded tube. Recognized throughout industry for its exceptional quality, Republic ELECTRUNITE is available in a wide variety of forms, sizes and gages—in both carbon and stainless steels.

Though produced in great volume, every foot in every shipment of ELECTRUNITE tubing is *consistently uniform,* including wall thickness, ductility and concentricity. Surfaces are free from scratches and pit marks. Response to heat treatment is uniform. And it is easy to bend, work with . . . often eliminates costly fabricating or machining operations.

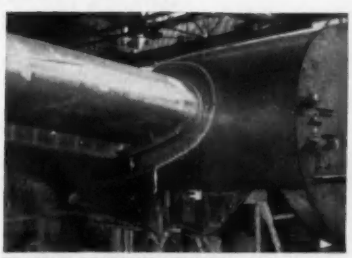
If strength, lightness, safety are requirements in your product, investigate Republic ELECTRUNITE Steel Tubing. Our engineers will help you with design problems, show you the way to greater economies and profits. Send coupon for facts.

MORE REPUBLIC PRODUCTS MADE FOR MOVEMENT:

CYCLIC COMPRESSOR OPERATION REQUIRES AN ABSOLUTE SEAL at the joint between compressor cylinder and head. Republic Alloy Steel Hex Head Cap Screws are made to order for this application because they neither stretch nor lose their grip under the heating and cooling cycle of on-off operation. In fact, they more than meet tensile strength, yield point, hardness and ductility requirements. Republic makes 20,000 standard and 8,000 special types of headed and threaded products for every application. Send coupon for full information.



STRONG RESISTANCE TO CORROSION, WEAR AND ABRASION make Republic Cold Finished Stainless Steel Bars ideal for this unique application. It's a testing tank for advance-type seaplane hulls. Testing is conducted by suspending hull model from carriage which rolls on Republic Stainless Steel Bars. Besides ease of maintenance, these bars provide higher tensile and yield strength, close tolerance, and a fine surface finish, permitting smooth, accurate operation of testing device. Republic metallurgists and engineers will help you apply stainless steel to your present and future work.



TITANIUM PROVIDES STRENGTH AND WEIGHT-SAVINGS in aircraft such as the DC-7. Republic is an old hand at this high strength-to-weight business. We pioneered the use of alloy steels, then stainless steels—followed by high strength steels. Now come Republic Titanium and Titanium Alloys. Years of experience gained in helping hundreds of manufacturers design and re-design their products to get more strength with less weight are available to you. To get more information on how corrosion-resistant titanium can solve many problems, send coupon.

STEEL

and Steel Products

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Please send more information on:

☐ Mechanical Steel Tubing ☐ Stainless Steel
☐ Fasteners ☐ Titanium

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

New Production and Plant Equipment

(*Continued from page* 388)

has been introduced that is said to avoid waste and save time by pumping and delivering only the desired quantity of material. It will deliver material in quantities as small as 10 grams. Maximum output is three pounds per minute.

Material is fed to the dispenser directly from drums or containers through hoses. It is completely portable, weighing 25 lb. *Auto-Air Industries, Inc.*

Circle 66 on postcard for more data

Cleaner for Aluminum

SPECIALLY compounded to clean without foaming in agitated tanks, a new cleaner has been introduced for removing identification inks, grease, oils and other heavy soils from aluminum. Even without agitation its ability to remove difficult soils is said to be excellent.

Used at 6 to 8 oz/gal of water, at temperatures between 160 and 180 F, solutions of Aluminum Cleaner No. 164 are claimed to be completely safe on aluminum and its alloys. *Oakite Products, Inc.*

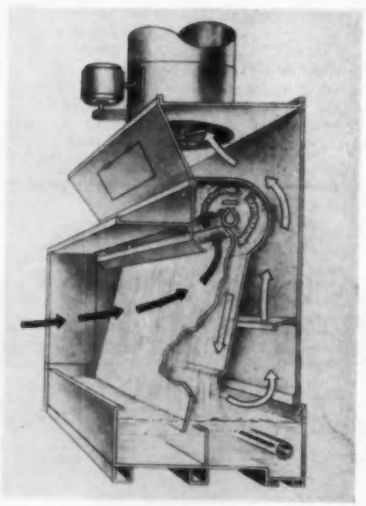
Circle 67 on postcard for more data

Spray Booth

DESIGNED to remove virtually all air-borne pigment from the exhaust air, a new water wash spray booth has an improved air-whirl, water wash action. Air is drawn through a continuous curtain of moving water which scrubs out suspended paint particles. In addition, paint particles are thrown against the adjacent walls and curtains by the centrifugal action of rapid changes in air stream direction. Water then flushes these particles into the collecting pan.

Identified as the Style E Dynaprecipitor, its construction permits the removal of major sections (such as the front water curtain and manifold) without tools, for ease of inspection and cleaning. A decreased throat area, the company points out, increases the amount of water per cubic foot at the throat and improves the scrubbing action. The water circulation is reported to form a complete circuit, constantly flushing the entire system when the booth is in operation. A throttling valve provides adjustment of water flow across the curtains. Other stated features include a hinged water curtain, and a sediment-free water intake supply. *Binks Manufacturing Co.*

Circle 68 on postcard for more data



Binks Style E Dynaprecipitor water wash spray booth

New Power Package for Lift Trucks!

New Small Converter

Cast-in chambers for gas and water give this small Model H Century Converter a king-size capacity. Weighs only 3 lbs. Is 5¼" in dia. by 3". Has built-in lockoff and manual or electric primer.

New Fuelock-Strainer

Small compact unit is a filter-strainer and an ignition controlled fuelock. Provides extra safety when truck is idle. Easy to install; easy to clean.

New LP-Gas Carburetor Jetted* to Engine's Performance Curve

New, small Century Carburetor, engineered especially for lift trucks, is compact to fit in small confined areas. It's a full carburetor, not an adapter, and thus provides fuel economy and dependable performance in all operating conditions.

Available in ½", ¾" and 1" SAE sizes, the Century is calibrated to the power curves of each engine and insures easy starting and perfect idling.

Get the facts! Order a Century carburetion "Power Package" today. Ask for complete data. CENTURY GAS EQUIPMENT CO., 6855 E. Rosecrans Ave., Paramount, California.

**Jetted on OEM installations; adjustable jet for conversions.*

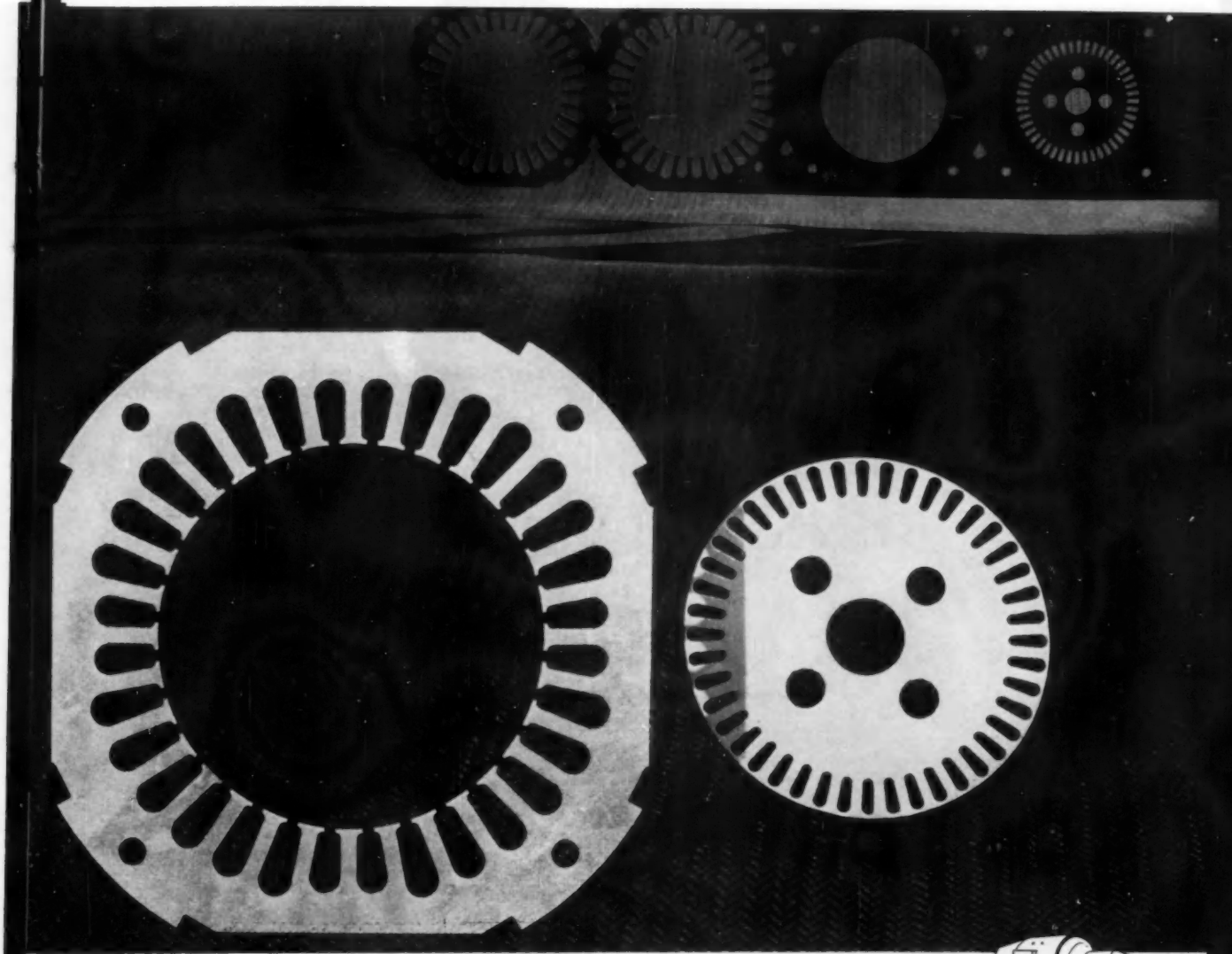
Century carburetion equipment is registered under Underwriters Laboratories, Inc.

CENTURY

LP-Gas Carburetion

3C Controlled Combustion Carburetion

Century Gas Equipment Co. 6855 E. Rosecrans Ave., Paramount, Calif.



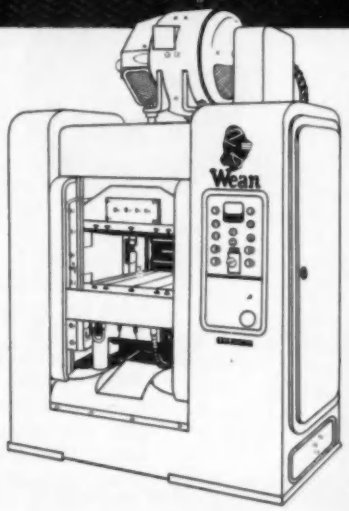
What shape is your production in?

Production Rate:

Conventional Press — 180 two-piece units per minute.
Wean "Flying Press" — 300 two-piece units per minute.

Both of these electric motor parts, measuring 3½" and 5½" in diameter respectively, were produced in a single set-up on a conventional press at the rate of 180 per minute. Using the same dies, the "Flying Press" produced these parts at the rate of 300 per minute. This is typical of the type of production rates that result when the job is done on a "Flying Press."

Although engineered for the ultra-high speeds, the "Flying Press" offers other major cost-saving advantages too. For instance, since it has no brake or clutch to wear out, maintenance savings alone are an important consideration. But you'll want the complete story so . . . write today for your copy of the "Flying Press" brochure. It will open your eyes to new production horizons.



Wean Equipment Corporation
CLEVELAND 17, OHIO

there are hundreds of ways in which Industry uses **SPIROLOX** to solve retaining problems

News of the

MACHINERY INDUSTRIES

By Thomas MacNew

Taxation of Capital Consumption as Income Is Inequitable; it Retards Progress by Curtailing Funds Available for New Equipment

Underdepreciation from Inflation

American industry will pay income tax this year on something like $6 billion of capital consumption, according to a recent report on depreciation made by the Machinery and Allied Product Institute. The Institute goes on to say that the taxation of capital consumption as income is not only inequitable, but it retards progress through curtailment of the funds available to industry for capital investment. Under present conditions, historical-cost tax depreciation is a built-in decelerator of progress. The report states, "The revival of management interest in the underdepreciation problem is particularly marked in industries that constructed a substantial volume of facilities under certificates of necessity granted during and immediately after the Korean war. The decline of capital-recovery deductions accompanying the completion of amortization on these facilities (a decline already under way and destined to proceed rapidly hereafter) will entail a sharp increase of income tax liabilities and a corresponding decrease of internally-generated capital funds. The impending exhaustion of amortization can present an acute problem for such industries, especially when they are confronted by heavy capital expenditure requirements. While it is quite natural that the run-off of amortization should prompt a new look at the adequacy of normal depreciation based on historical cost, the latter problem is of course of much broader impact. It affects all users of long-lived productive facilities acquired at lower price levels. There is evidence that the intellectual ice is breaking up quite generally on this question, both in management and in the accounting profession."

Stability in '57 Orders

Mixed opinions prevail about the outlook for machine tool business this year. General industry feeling, however, is that orders during 1957 will ease from 10 to 20 per cent under the $924 million in 1956, the second best peacetime year.

While that total is not expected to be equaled for some time, a 10-20 per cent decline would give the industry a total volume of between $740 million and $830 million. That would still represent one of its best peacetime years. Actually, sales last year were exceptional for the machine tool business, and observers believe 1957 will see a leveling-off period.

A sizable portion of last year's business came from automobile manufacturers. An unusually large volume of orders from the Air Force also contributed significantly to the increased volume. It is estimated that the Big

HANSEN

SERIES RL

QUICK-CONNECTIVE

RING-LOCK COUPLINGS

HANSEN SERIES RL EFFECTIVELY HANDLES MORE VOLUME THAN ANY OTHER COUPLING OF EQUAL DIMENSIONS

Hansen Series RL One-Way Shut-Off Couplings will handle any job in your shop using ¾" to ⅛" connections—from the air line to the air tool. All Hansen Series 2-RL Sockets and Plugs are interchangeable with each other. Likewise all Sockets and Plugs of the slightly larger, greater capacity Series 3-RL are similarly interchangeable with each other.

Consequently, by standardizing on either Hansen Series 2-RL or Series 3-RL Couplings, you eliminate any need for various size couplings in your hook-up—make it easy to keep stock of parts in balance—and hold inventories to a minimum.

Locking ring provides positive lock and assures tight fit. Equipped with automatic sleeve lock.

HANSEN SERIES RL HANDLES ANY JOB WITH FITTINGS FROM ¾" to ⅛", FROM THE AIR LINE TO THE AIR TOOL

Two-Way Shut-Off and Straight-Through Couplings also available.

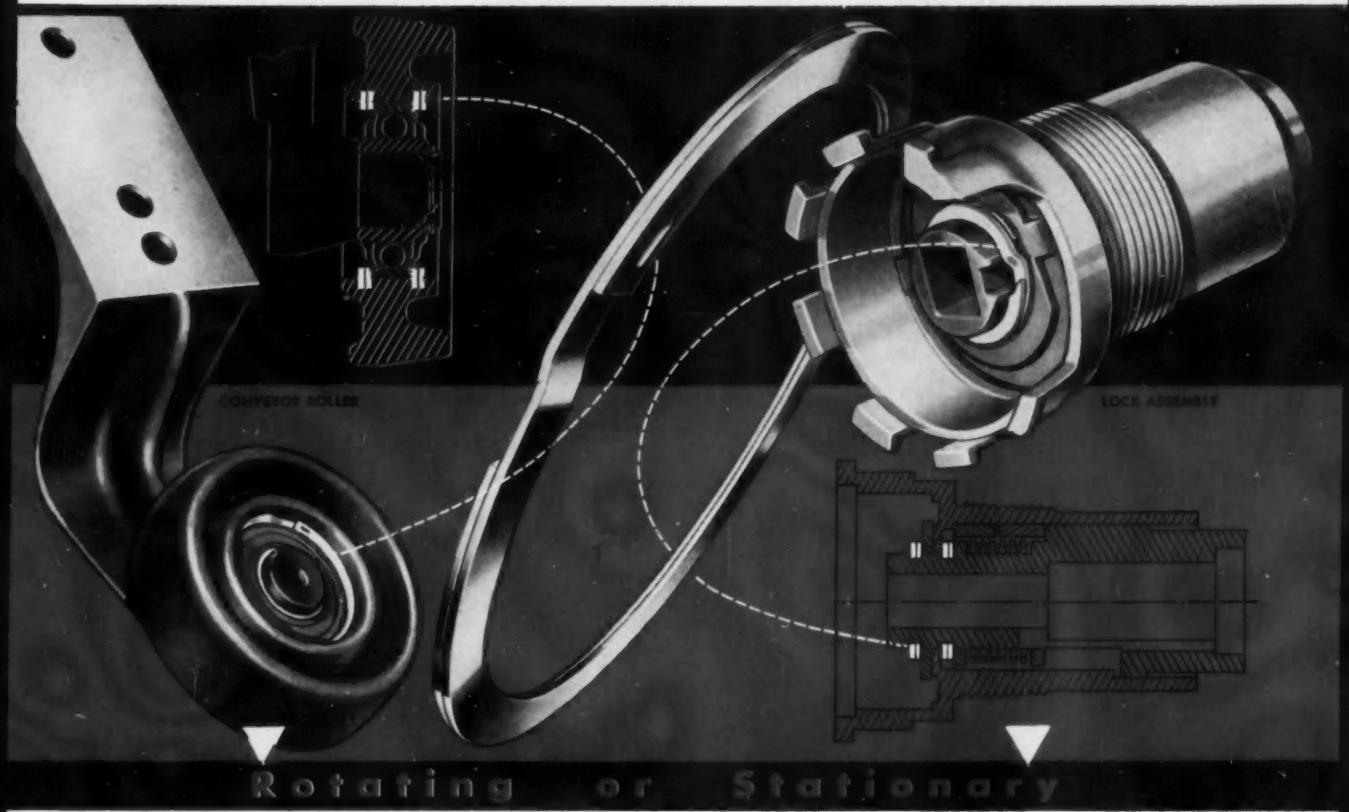
WRITE FOR CATALOG

SINCE 1915 — QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 11, OHIO

there are hundreds of ways in which Industry uses **SPIROLOX** to solve retaining problems



assemblies retained with Spirolox look neater,

last longer, use fewer parts, are easier to take apart and put together

Wherever parts rotate, wherever parts are to be secured on shafts or in housings, wherever moving parts must *hold* together —Spirolox Retaining Rings do the job better! Even on rotating assemblies, as shown in the conveyor roller application at left above, Spirolox attains neat, compact, simplified design. The stationary application of a lock assembly (right above) illustrates how Spirolox can be applied in those hard-to-reach places where the retaining ring must operate in a very confined space.

Exclusive Spirolox Design makes possible a variety of applications that is almost limitless. Secret of this design is the patented Spirolox *two-turn construction*, which ELIMINATES THE GAP and makes possible a UNIQUE LOCKING CHARACTERISTIC. A step or offset, formed in the ring so that the two turns are parallel, *bridges the gap* found in conventional retaining rings. Result: better conformability, even in the most restricted places. The effective locking property of Spirolox is created by a "friction lock", formed under thrust between the two turns. Result: greater holding power to make the ring STAY PUT in its groove.

The success of Spirolox construction proves itself not only in superior operation. It also makes possible easier installation, less-complicated machining, simplified servicing and quicker dismantling of assemblies retained the Spirolox way. These compact spring-steel rings spiral into their grooves easily, saving many man-hours in manual installation. Spirolox Rings adapt easily to fixtures for automatic production line installation. They eliminate costly machining and special tools. Spirolox Rings facilitate maintenance and servicing in the field because they come out at the flip of a screwdriver, ready for re-use. Thus, factory-adjusted or assembled units REMAIN UNCHANGED, even after repeated dismantling operations during servicing or repairs.

HANDY, ILLUSTRATED SPIROLOX CATALOG is yours without cost or obligation. It may be your key to simpler, lighter, more compact machinery or parts. If you wish, send us a print of your product and our engineers will point out Spirolox application possibilities. **Ramsey Corporation, Dept. H, St. Louis 8, Missouri.**

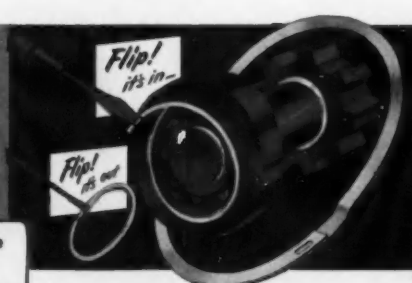
U. S. Pat. No. 2,450,425 and Foreign Pats. Other Pats. Pend.

R6012R

the better way

Spirolox RETAINING RINGS

to hold moving parts TOGETHER!



Write for Samples

gapless • concentric • requires no special tools • easy-in, easy-out • re-usable • stays put

News of the

MACHINERY INDUSTRIES

By Thomas MacNew

Taxation of Capital Consumption as Income Is Inequitable; it Retards Progress by Curtailing Funds Available for New Equipment

Underdepreciation from Inflation

American industry will pay income tax this year on something like $6 billion of capital consumption, according to a recent report on depreciation made by the Machinery and Allied Product Institute. The Institute goes on to say that the taxation of capital consumption as income is not only inequitable, but it retards progress through curtailment of the funds available to industry for capital investment. Under present conditions, historical-cost tax depreciation is a built-in decelerator of progress. The report states, "The revival of management interest in the underdepreciation problem is particularly marked in industries that constructed a substantial volume of facilities under certificates of necessity granted during and immediately after the Korean war. The decline of capital-recovery deductions accompanying the completion of amortization on these facilities (a decline already under way and destined to proceed rapidly hereafter) will entail a sharp increase of income tax liabilities and a corresponding decrease of internally-generated capital funds. The impending exhaustion of amortization can present an acute problem for such industries, especially when they are confronted by heavy capital expenditure requirements. While it is quite natural that the run-off of amortization should prompt a new look at the adequacy of normal depreciation based on historical cost, the latter problem is of course of much broader impact. It affects all users of long-lived productive facilities acquired at lower price levels. There is evidence that the intellectual ice is breaking up quite generally on this question, both in management and in the accounting profession."

Stability in '57 Orders

Mixed opinions prevail about the outlook for machine tool business this year. General industry feeling, however, is that orders during 1957 will ease from 10 to 20 per cent under the $924 million in 1956, the second best peacetime year.

While that total is not expected to be equaled for some time, a 10-20 per cent decline would give the industry a total volume of between $740 million and $830 million. That would still represent one of its best peacetime years. Actually, sales last year were exceptional for the machine tool business, and observers believe 1957 will see a leveling-off period.

A sizable portion of last year's business came from automobile manufacturers. An unusually large volume of orders from the Air Force also contributed significantly to the increased volume. It is estimated that the Big

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SERIES RL

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RING-LOCK COUPLINGS

HANSEN SERIES RL EFFECTIVELY HANDLES MORE VOLUME THAN ANY OTHER COUPLING OF EQUAL DIMENSIONS

Hansen Series RL One-Way Shut-Off Couplings will handle any job in your shop using ¾" to ⅛" connections—from the air line to the air tool. All Hansen Series 2-RL Sockets and Plugs are interchangeable with each other. Likewise all Sockets and Plugs of the slightly larger, greater capacity Series 3-RL are similarly interchangeable with each other.

Consequently, by standardizing on either Hansen Series 2-RL or Series 3-RL Couplings, you eliminate any need for various size couplings in your hook-up—make it easy to keep stock of parts in balance—and hold inventories to a minimum.

HANSEN SERIES RL HANDLES ANY JOB WITH FITTINGS FROM ¾" to ⅛", FROM THE AIR LINE TO THE AIR TOOL

Locking ring provides positive lock and assures tight fit. Equipped with automatic sleeve lock.

Two-Way Shut-Off and Straight-Through Couplings also available.

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SINCE 1915 QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN MANUFACTURING COMPANY

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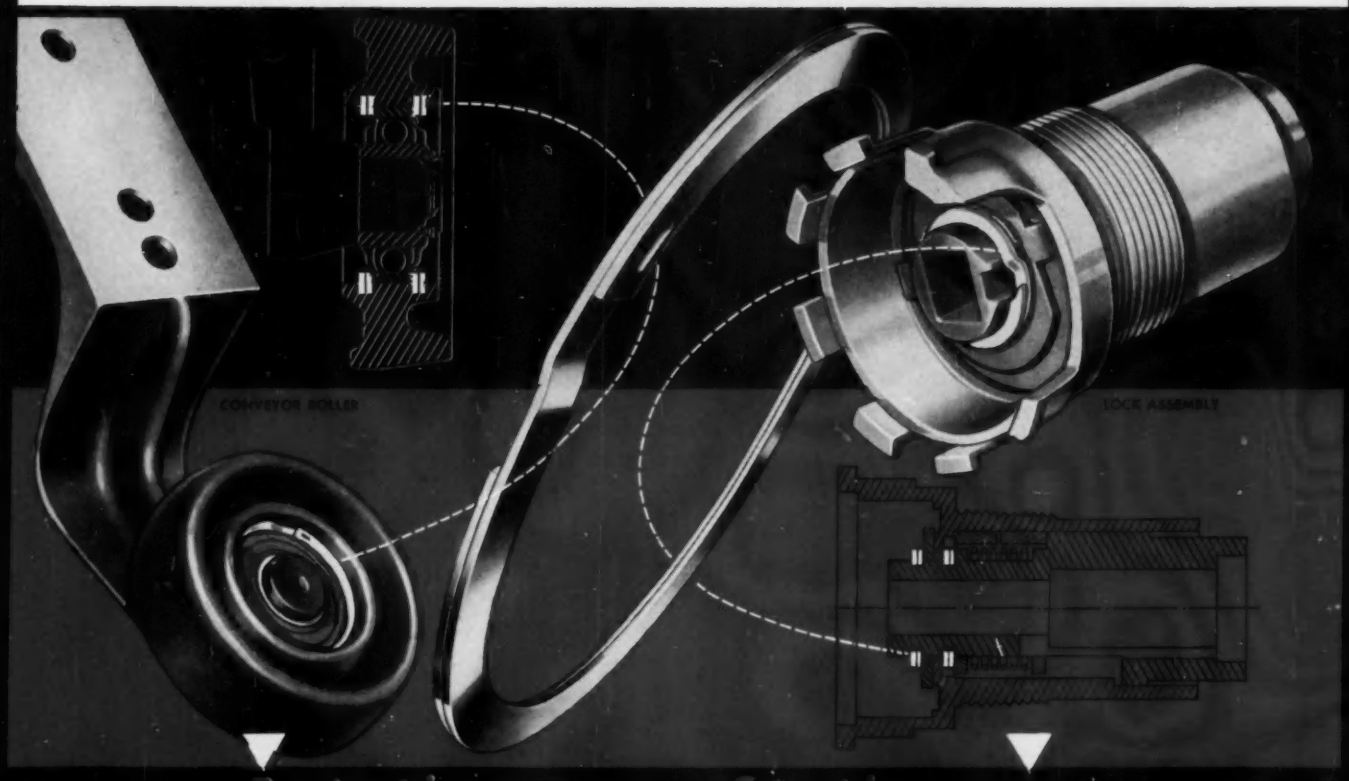
there are hundreds of ways in which Industry uses **SPIROLOX** to solve retaining problems



assemblies retained with SpiroLox look neater,

last longer, use fewer parts, are easier to take apart and put together

Wherever parts rotate, wherever parts are to be secured on shafts or in housings, wherever moving parts must *hold* together —Spirolox Retaining Rings do the job better! Even on rotating assemblies, as shown in the conveyor roller application at left above, Spirolox attains neat, compact, simplified design. The stationary application of a lock assembly (right above) illustrates how Spirolox can be applied in those hard-to-reach places where the retaining ring must operate in a very confined space.

Exclusive Spirolox Design makes possible a variety of applications that is almost limitless. Secret of this design is the patented Spirolox *two-turn construction*, which ELIMINATES THE GAP and makes possible a UNIQUE LOCKING CHARACTERISTIC. A step or offset, formed in the ring so that the two turns are parallel, *bridges the gap* found in conventional retaining rings. Result: better conformability, even in the most restricted places. The effective locking property of Spirolox is created by a "friction lock", formed under thrust between the two turns. Result: greater holding power to make the ring STAY PUT in its groove.

The success of Spirolox construction proves itself not only in superior operation. It also makes possible easier installation, less-complicated machining, simplified servicing and quicker dismantling of assemblies retained the Spirolox way. These compact spring-steel rings spiral into their grooves easily, saving many man-hours in manual installation. Spirolox Rings adapt easily to fixtures for automatic production line installation. They eliminate costly machining and special tools. Spirolox Rings facilitate maintenance and servicing in the field because they come out at the flip of a screwdriver, ready for re-use. Thus, factory-adjusted or assembled units REMAIN UNCHANGED, even after repeated dismantling operations during servicing or repairs.

HANDY, ILLUSTRATED SPIROLOX CATALOG is yours without cost or obligation. It may be your key to simpler, lighter, more compact machinery or parts. If you wish, send us a print of your product and our engineers will point out Spirolox application possibilities. Ramsey Corporation, Dept. H, St. Louis 8, Missouri.

U. S. Pat. No. 2,450,425 and Foreign Pats. Other Pats. Pend.

R6012R

the better way

SpiroLox RETAINING RINGS

to hold moving parts TOGETHER!

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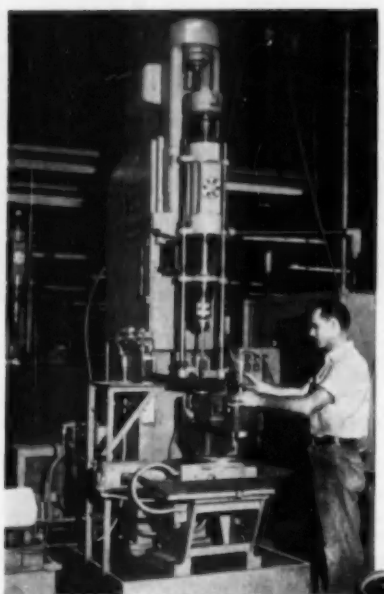
gapless • concentric • requires no special tools • easy-in, easy-out • re-usable • stays put

WHY Emerson Electric MICROHONES Laminated Steel Rotors

The Emerson Electric Manufacturing Company is constantly searching for the best possible processing methods. Working with Micromatic engineers on problems encountered in processing shaft holes in their laminated steel rotors, Emerson Electric found that Microhoning would provide much higher production quality while lowering processing costs. The following Microhoning benefits are now obtained:



Model 728 Hydrohoner with automatic Microsize, Microdial and two station rotary indexing fixture. Hole Tolerances: Diameter .0002 inch, straightness and roundness .0001 inch.

CUT REJECTS
With former processing method rejects ran too high. Microhoning controls size and assures a clean hole—rejects are substantially reduced.

ELIMINATED OPERATIONS
Old processing method required two operations. In one operation, Microhoning generates size and straightness within specified tolerances.

REDUCED BALANCING TIME 70%
To preclude vibration and poor operating characteristics, it is essential that shaft hole be concentric with O.D. of rotor. Microhoning reduced by 70% the amount of dynamic balancing correction required.

PROCESSING COSTS CUT 70%
Current figures show the cost of Microhoning shaft holes in rotors to be less than 30% of processing by old method.

Rotors (from 2¼ to 4 inches long) are all Microhoned on the same machine by changing adaptor in fixture and resetting stroke length.

Learn why Microhoning will give you efficient stock removal, closer tolerances, accurate alignment and functional surfaces.

☐ Please have a Micromatic Field Engineer call.
☐ Please send Micromatic literature and case histories.

NAME_____

TITLE_____

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STREET_____

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MICROMATIC HONE CORP.
8100 SCHOOLCRAFT AVENUE · DETROIT 38, MICHIGAN

Three car companies earmarked about $350 million in the latter part of 1955 and early 1956 on new engine programs.

Incoming business at the start of the year was still at a relatively high level, continuing briskly into February. Although new orders in January were somewhat under the same month a year earlier, they were about $5.8 million ahead of the $57.2 million in December. Shipments in January were about 40 per cent ahead of the same month last year, although 10 per cent under December. Backlog of orders now is estimated at about six months compared with 8½ months a year ago.

Around the Industry

New officers of the Industrial Heating Equipment Association: President—W. H. Holcroft, Holcroft & Co.; Vice President—C. F. Olmstead, Lee Wilson Engineering Co., Inc.; Treasurer—R. E. Whittaker, Swindell-Dressler Corp.; Directors—R. L. Harper, Harper Electric Furnace Corp.; A. R. Robertson, Wayne Industrial Furnace Co.; and A. E. Tarr, Leeds & Northrup Co.

Cone Automatic Machine Co., Inc., has formed a new division to handle engineering and sales for the Pilot automatic copying lathe. Headquarters of the new Pilot Division will be in the company's New York office. The division's activities will be supervised by J. A. Gerard, first vice president of Cone. H. Ranney has been appointed chief engineer for the newly-formed division.

The Magnaflux Corp.'s main plant in Chicago has been enlarged by a just-completed building addition. This new area increases the asembly area by a third—10,000 additional feet, and will be devoted to additional production operations.

The Cleveland Automatic Machine Co. has merged with The J. H. Day Co., Inc. The name of the continuing corporation is The Cleveland Automatic Machine Co., and Day operations will be continued as the J. H. Day Company Division. The J. H. Day Div. builds processing machinery for the baking, paint and varnish, printing ink, chemical, rubber, pharmaceutical, cosmetic, paper and pulp and food industries.

Mattison Machine Works has purchased all production rights to the grinders formerly built by Mercury Engineering Corp., including patents, engineering drawings, production tooling and component parts. Assembly of Mercury grinders has already started in the recently expanded Mattison plant.

The guide to standards for conveyors as approved by the American Standards Association is now "Conveyor Terms and Definitions," the industry dictionary published by the Conveyor Equipment Manufacturers Association. It is identified as American Standard B 75.1-1956, UDC No. 621. 867:001.4. CEMA's popular 64-page dictionary was first published in 1952, and about 25,000 copies are in use by conveyor manufacturers and users and others throughout the world, according to R. C. Sollenberger, CEMA executive vice president. It defines nearly 1500 terms applied to conveyors and conveyor equipment and contains nearly a hundred line drawings.

The Sheffield Corp., subsidiary of Bendix Aviation, has established a Canadian manufacturing and service plant in Windsor, Ont. The Windsor affiliate, Sheffield Tool and Gage of Canada, Ltd., will employ approximately 40 people and will be under management of T. W. Clark.

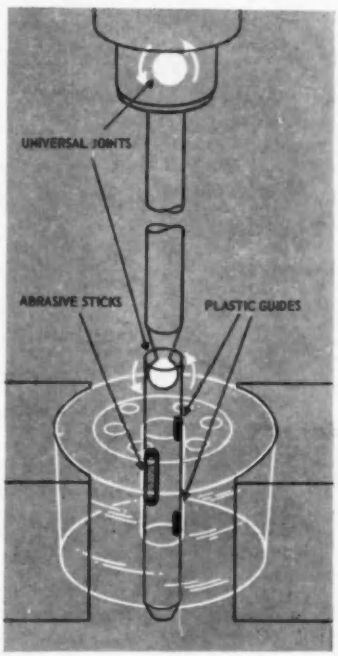
An hour-long closed circuit audio program, believed to be the largest ever attempted, will climax the silver anniversary program of the American Society of Tool Engineers, to be held in Houston March 23-28. Scheduled for the evening of March 25, the sound will be fed simultaneously to 143 ASTE chapters in the U. S. and Canada. The program will include a discussion of the purpose and importance of technical societies, tool engineering and the tool engineer to industry, education and the public. Some of the country's foremost industrial, military and educational leaders will participate in the event. The closing portion of the program will include an on-the-spot chartering of the Society's first foreign "off shore" chapter in Sydney, Australia. "A Better Life Through Creative Manufacturing" is the motto adopted by ASTE for the aniversary year.

The Society has also announced the establishment of an Annual Eli Whitney Memorial Lecture Series, in commemoration of the founder of modern tool engineering and American mass-production methods. Each year the honor of delivering the Eli Whitney Memorial Lecture will be awarded to an outstanding contributor to industrial progress who has "demonstrated superiority in the quality of achievement and caliber of professional service in applying knowledge to the science of tool engineering to the needs of industry." First to be honored in this series is Louis F. Polk, vice president of Bendix Aviation Corp. and president of the Bendix Sheffield Div. He has selected our country's

HOW MICROHONING Laminated Rotors Cuts Processing Costs

Emerson Electric squirrel-cage rotors are made of special "electrical grade" steel laminations and each lamination is coated with oxide insulation. In processing the rotor, the O.D. is turned concentric with the shaft hole. Then, in one operation, Microhoning accurately generates finished size and straightness of shaft hole without any change in hole location.

The Micromold tool has two universal joints in the drive shaft which allow the tool body to align itself with the shaft hole. Microhoning of holes is along same axis from which O.D. was turned.



For electrical and mechanical efficiency, assembled motors must have a uniform air-gap between rotor and stator of .006 inch to .011 inch. Because laminated surface is rough and close tolerances must be held, special guided Micromold tools are used. Plastic guides above and below abrasive sticks, control dressing of abrasive and assure generation of round, straight shaft holes.

Before installing Microhoning equipment, two operations were required to finish shaft hole—rejects ran high. Microhoning greatly reduced the amount of dynamic balancing correction required.

The principles and applications of Microhoning are explained in a 30-minute, 16 mm, sound movie, "Progress in Precision" . . . available at your request.

☐ Please send me "Progress in Precision" in time for showing on_____(date).
☐ Please have a Micromatic Field Engineer call.
☐ Please send Microhoning literature and case histories.

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MICROMATIC HONE CORP.
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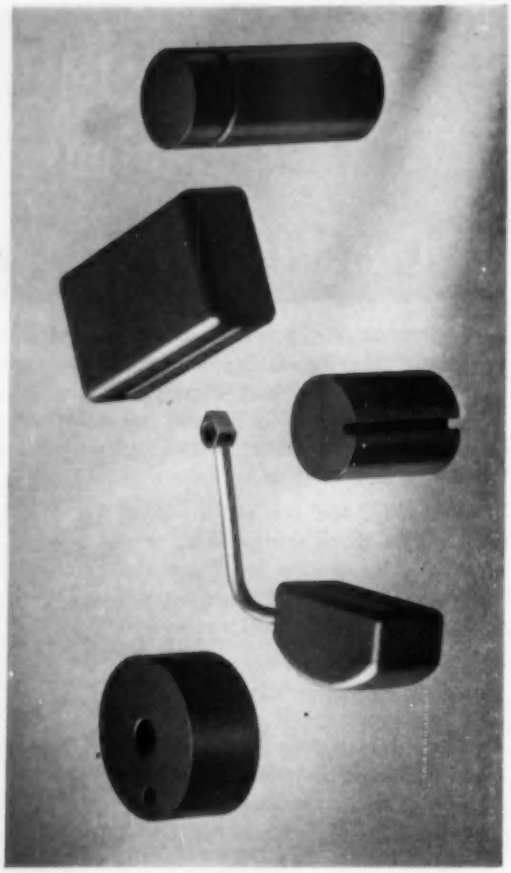

These floats come in one piece and stay that way

Floats made by Rogers are molded in one piece of cellular rubber, an exceptionally buoyant material composed of myriads of sealed, gas-filled cells. The floats are puncture-proof, homogeneous and uniform. Ridges, slots, grooves and other three-dimensional requirements are integrally molded. Levers can be attached during molding.

Just as important, the rubber used for your floats is specifically formulated to withstand attack by the chemicals it will contact. Fluid absorption is so low as to be insignificant—the sealed, gas-filled cells present a virtually impenetrable barrier to liquids. You get a float that stays afloat indefinitely.

You can—as others are already doing—improve fluid control with Rogers floats. We welcome special requirements. Write Dept. A, Rogers Corporation, Rogers, Conn., for further details.

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DUROIDS • SHOE MATERIALS • ELECTRICAL INSULATION • PLASTICS • RUBBER • FABRICATING • DEVELOPMENT

"Heritage and Growing Abundance" as the topic for his address.

Bullard Co. has purchased Hydra-Feed Machine Tool Corp. The purchase includes the company's line of automatic production lathes. Bullard will move the entire operation to Bridgeport.

For the fourth quarter of 1956, Bullard's net income after taxes amounted to approximately $400,000, or 55 cents per share, and net shipments were some $11,100,000. In the corresponding period in 1955, net income after taxes was $282,019 and net shipments $10,130,074. For the full year 1956, net income after taxes totaled about $1,500,000, or $2.06 per share, with net shipments of slightly more than $42,000,000. In comparison, there was a net loss after credit for Federal tax-back for the year 1955 of $1,029,099, or $1.41 per share with net shipments totaling $30,278,-284. The backlog of unfilled orders declined somewhat in the fourth quarter of 1956 to $17,900,000 from $20,300,-000 at the beginning of the quarter.

The fourth annual Material Handling Training Conference is scheduled this year from June 16-29 at the Industrial Management Center, Lake Placid, N. Y. Director James R. Bright said that the new session will concentrate on "the cost reduction opportunities possible through material handling improvement."

Tatnall Measuring Systems Co., newest subsidiary of The Budd Co., has acquired U. S. and Canadian rights, to PhotoStress, a new stress analysis technique, from PhotoStress, Inc. PhotoStress uses conventional photoelastic methods for the experimental stress analysis of actual full size structures or components made of metal, concrete, wood, glass, plastic, rubber, stone or other structural materials, regardles of size or shape. A transparent plastic is bonded to the actual part and strains are determined under actual test conditions. It is both quantitative in terms of micro inches per inch strain and qualitative by showing direction and magnitude of principal strains.

The original surface grinding machine which spurred the founding of the Abrasive Machine Tool Co. has been sent to the Smithsonian Institute in Washington, D. C. It will be on permanent display in the Division of Engineering. Built in 1916, it was the first machine tool of its kind to utilize a solid one-piece frame with the motor mounted on the inside of the machine.

The annual Sales Conference of sales executives, advertising managers

(*Turn to page* 402, *please*)

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New 24-page brochure gives complete engineering data

Here's the story of fatigue-proof™ steel bars

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Elevated Temperature Drawing

*a **new** material—made by*

*a **new** process—with*

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High Strength
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Plus Accuracy, Smooth Finish, and Straightness

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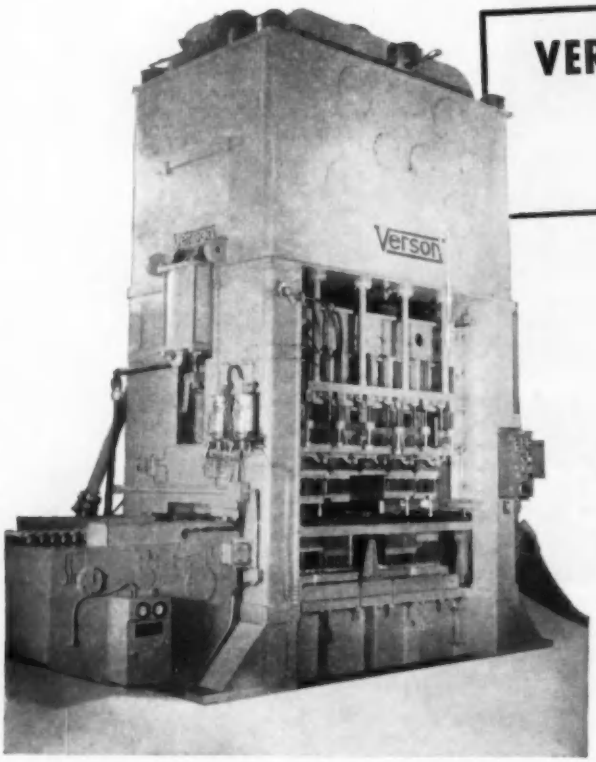
There is only one primary reason
for buying a Transmat press . . .

LOWER UNIT COSTS WHERE PRODUCTION



TYPICAL 500 TON VERSON TRANSMAT—This is the press that produces the valve covers described at the right. Today's Verson Transmat is the culmination of twenty years of specific development of an automatic process to produce multiple operation stampings. Since the installation of the first Transmat eighteen years ago,* the machine has progressed to the point where there is no limit to tonnage capacity or size of piecepart that can be produced. Transmats as small as 100 tons and as large as 4000 tons have been built.

*Still in service, producing 1300 oil filter shells per hour.

VERSON TRANSMAT PRESSES are engineered and built to give you this economy

If you produce any part requiring four or more operations on 4000 or more pieces per day, Verson Transmat Presses offer remarkable opportunities for cost reduction.

The Verson Transmat is designed and built solely for the purpose of producing multi-operation stampings at the lowest possible cost. Design is not compromised in any way that will affect this objective! As a result Verson Transmats offer a combination of advantages available in no other transfer press—

- High speed—20, 25 and even 36 strokes per minute with machines having capacities up to 4000 tons.
- Positive, direct, gear driven transfer mechanism with safety interlocks make misfeeding impossible.
- Non-oscillating feed bars, only the fingers move in and out—fast, smooth action.
- Automatic, delayed action, adjustable stroke knockout cylinders at each station—prevents damage to piecepart by positive stripping and location.
- Individual adjustable wedge slides for precise die adjustment.
- Fully automatic lubrication—two Cascade oil flow systems and two pressure systems.

When you buy a transfer press be sure you get the high production you are paying for. Be sure you get the efficient, trouble-free operation that Verson know-how assures you. Described at the right are a few of the jobs being performed successfully at this moment. We'll be happy to tell you about others . . . and we'll welcome the opportunity to show you what Transmats can do for you. Write or phone.

ORIGINATORS AND PIONEERS OF ALLSTEEL STAMPING PRESS CONSTRUCTION

Verson

VERSON ALLSTEEL

9307 S. Kenwood Avenue, Chicago 19, Illinois

MECHANICAL AND HYDRAULIC PRESSES • TOOLING • TRANSMAT

ON JOBS REQUIREMENTS ARE HIGH

Here's Proof

of what VERSON TRANSMATS can do

These are verified production figures of a few of the Transmats in use in metalworking plants at this moment.

20⅜" x 3⅝" x 2¾"—18 ga. stock.

1,200 VALVE COVERS PER HOUR

Five operations on each, a total of 6,000 press operations per hour. The part is formed from strip. Two such presses are currently in operation, both since 1954.

2" x 5¼" x 1⅝" deep—¼" stock.

2,200 SPRING SEATS PER HOUR

Eight operations on two parts at a time, a total of 8,800 press operations per hour. Parts are formed from blanks. One 1,000 ton Transmat has been in operation for over one year.

7" diam. x 4"—20 ga. stock.

900 HEADLAMP HOUSINGS PER HOUR

Six operations on each, a total of 5,400 press operations per hour. The part is formed from pre-blanked stock. Five 250 ton Transmats of this type are in service, the earliest since 1949.

19½" x 3¾" x 5½"—.1606" stock.

1,000 AXLE HOUSINGS PER HOUR

Seven operations on each, a total of 7,000 press operations per hour. The part is formed from previously developed blanks. Two such 2,200 ton Transmats have been in service for about one year.

PRESS COMPANY

Verson

8300 S. Central Expressway, Dallas, Texas

PRESSES • DIE CUSHIONS • VERSON-WHEELON HYDRAULIC PRESSES

In-place balancing of a large vertical generator.

PINPOINT and REMOVE VIBRATION with a TINIUS OLSEN Vibrodyne BALANCER

For final check balancing of rotating assemblies, or for locating and removing mechanical vibration in installed equipment . . . you will do the job quicker and easier with the Tinius Olsen Vibrodyne.

This highly sensitive in-place balancer isolates the source of mechanical vibration for accurate detection and correction. Unlike other balancers, the Olsen Vibrodyne employs a tunable pickup. With a simple turn of its frequency control, the Vibrodyne becomes super sensitive to unbalance at the operating speed of the part in the range of 225 to 3600 rpm, using the standard pickup. Extraneous vibrations are effectively eliminated—assuring a finer, more accurate degree of balance. In fact, with an Olsen Vibrodyne, you "start" to balance where other units "stop."

Get the full story. Write today for 12-page Bulletin 53.

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TESTING MACHINE COMPANY
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Testing and Balancing Machines

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News of the MACHINERY INDUSTRIES

(*Continued from page* 398)

and sales engineers of member companies of the National Machine Tool Builders' Association and the American Tool Distributors' Association will be held July 29 to August 2 at Cornell University. Advance indications are that 200 or more men will participate in the five-day program this year.

Warner & Swasey Co., product income and earnings in 1956 showed substantial increases over those for 1955 — $55,983,614, compared with $40,312,442 in 1955. Net income after Federal taxes was $4,404,379, compared with $2,814,938 in 1955. Income from the sale and rental of machine tools, the company's major line, showed an increase of 39 per cent over 1955, and sales of Gradall, the company's precision earth-moving machine, increased 43 per cent.

The Monarch Machine Tool Co. had, in 1956, the largest shipments of any peacetime year in its 48-year history. The new record total was $17,021,463 —nearly double the $9,759,121 in shipments reached in the preceding year and excelled only by the production peaks of World War II and the Korean war.

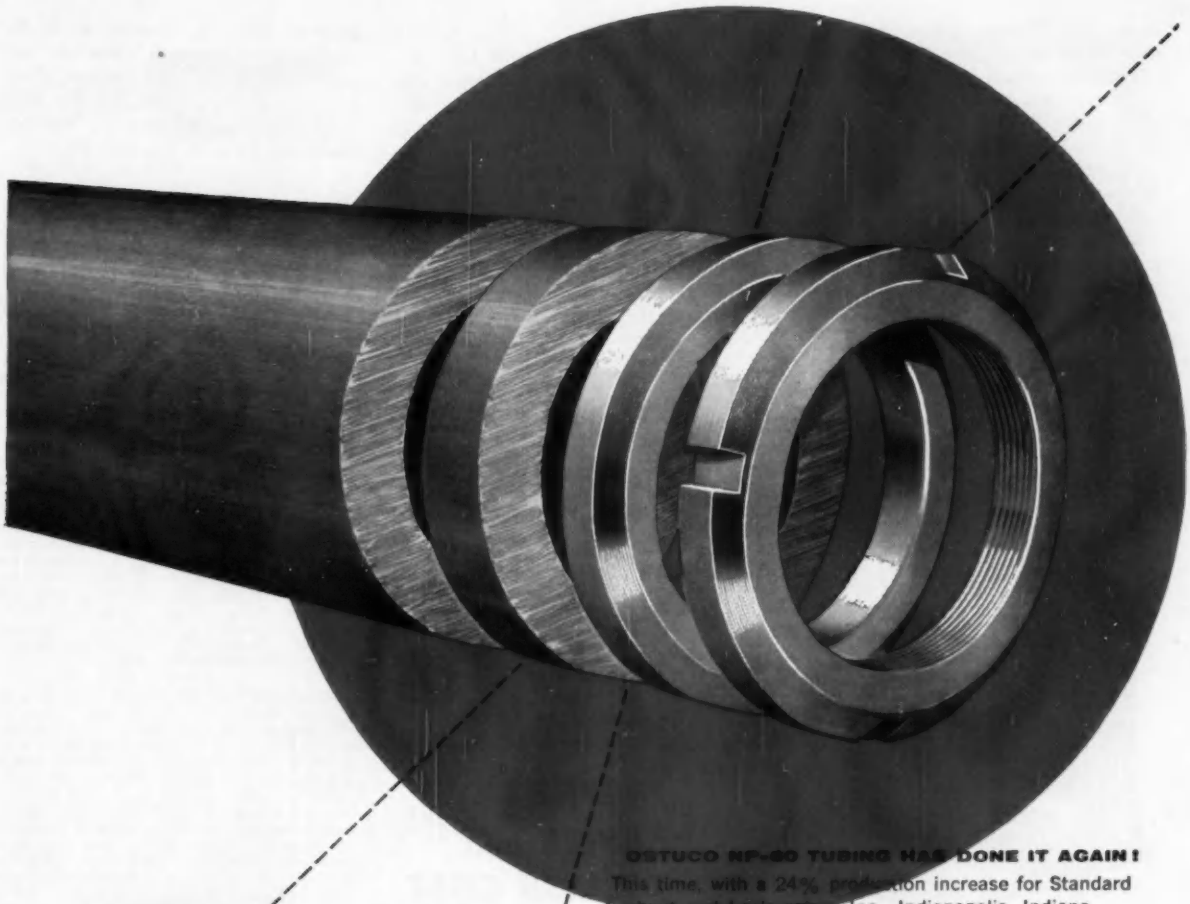
Tools for India

Officials of the U. S. Dept. of Commerce and the International Cooperation Administration met recently with representatives of U. S. machine tool manufacturers to discuss possibilities for developing the machine tool industry in India.

Marshall Smith, deputy assistant Secretary of Commerce for International Affairs, told the machine tool men that the U. S. Government is interested in assisting India in its plans for expansion of its machine tool industry as a means of implementing President Eisenhower's foreign aid program.

Government - to - Government economic aid in the form of loans and grants could be obviated, he said, in direct proportion to the extent to which U. S. and Indian private enterprise could enter into technological and licensing or investment arrangements for mutual profit.

There are now about 17 (including two Government-owned) machine tool plants in India, supplying about 20 per cent of the country's present needs, the deputy assistant Secretary



24% Production increase at Standard Locknut & Lockwasher, Inc. after switching to OSTUCO NP-60 tubing

OSTUCO NP-60 TUBING HAS DONE IT AGAIN!

This time, with a 24% production increase for Standard Locknut and Lockwasher, Inc., Indianapolis, Indiana. Tubing experts from OSTUCO recently recommended a switch to NP-60 Tubing specially processed for machineability for Standard's locknut and lockwasher line used in ball and roller bearing applications.

Standard components find their way into electric motors, machine tools, automotive, aircraft, farm and construction equipment. Other companies, with equally diverse applications, report similar success with NP-60.

If you are machining bearings, washers, collars, or any circular part, you'll do well to check into the merits of OSTUCO's new NP-60 seamless steel tubing.

GET NP-60 WITH "SINGLE-SOURCE SERVICE."

New NP-60 seamless tubing comes to you with OSTUCO'S unique "Single-Source Service"—experience and facilities for design and development, production and delivery all under one roof. Get together with a tubing expert for preliminary planning on NP-60's possibilities in your product. Contact your nearest sales office or write direct to the factory.

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OSTUCO TUBING

SEAMLESS AND ELECTRIC RESISTANCE WELDED STEEL TUBING—Fabricating and Forging

OHIO SEAMLESS TUBE DIVISION
of Copperweld Steel Company • **SHELBY, OHIO**
Birthplace of the Seamless Steel Tube Industry in America

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CANADA, RAILWAY & POWER ENGR. CORP., LTD.
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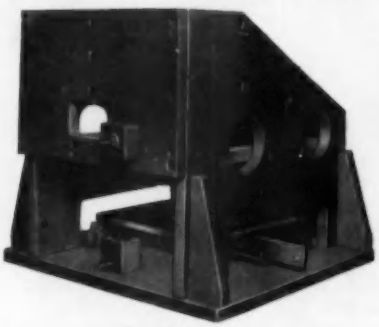
said. By 1960-61, India hopes to achieve an annual production of machine tools valued at $20 million, ten times the 1956 production value. Approximately 80,000 machine tools are presently operating in India, and it is estimated that by 1960-61, 170,000 will be required.

Some machine tool representatives indicated that, if requested by the U. S. Government, they would be willing to cooperate in lending industry experts to serve on a mission to India for the purpose of surveying that country's potential for a machine tool industry expansion.

The following members of the machine tool industry were in attendance at the meeting: William Rutz, Giddings & Lewis Machine Tool Co.; Gart Winkler, Dreis & Krump Mfg. Co.; A. L. West, Clearing Machine Corp.; Perrin G. March, III, The Cincinnati Shaper Co.; Rudolph F. Bannow, Bridgeport Machines, Inc.; J. T. Vinburg, Abrasive Machine Tool Co.; J. Robt. Jones, Kearney & Trecker Corp.; Eugene A. Coombs, Gisholt Machine Co.; J. A. Cover, Landis Tool Co.; J. A. Raterman, The Monarch Machine Tool Co.; Everett M. Hicks, Norton Co.; Charles R. Crowder, Van Norman Machine Co.; Ludlow King, National Machine Tool Builders' Association; and Wallace E. Carroll, American Gage & Machine Co.

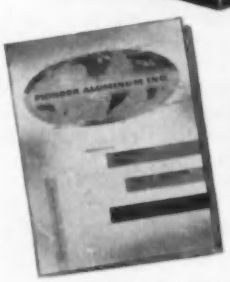
PIONEER Formula 921-T

Cast Aluminum Tooling Plate



Completes Any Tooling Job

FASTER
EASIER and
AT LESS COST



Ask any Pioneer 921-T distributor listed below for a copy of the new Pioneer brochure

For proof, look at the check fixture at the left (26"x34"x28") made of Pioneer 921-T to meet specifications of light weight, tolerances and time schedules not possible with any other material. Positive stability allowed tolerances of ±.0005" to be maintained. Machining and welding were accomplished at great time savings. Pioneer 921-T is the *new, universal* tooling plate for modern industry.

Pioneer 921-T is available through these suppliers:

ALBUQUERQUE, N.M.: Morris Steel & Supply Co.
ATLANTA, GA.: Southern States Iron Roofing Co.
BOSTON, MASS.: Joseph T. Ryerson & Son, Inc.
BIRMINGHAM, ALA.: Southern States Iron Roofing Co.
CHICAGO, ILL.: Joseph T. Ryerson & Son, Inc.
CLEVELAND, O.: Kasle Steel Corporation
DALLAS, TEX.: Vinson Steel & Aluminum Co.
DEARBORN, MICH.: Pioneer Aluminum Inc.
DENVER, COLO.: ABC Metals Corporation
DETROIT, MICH.: Kasle Steel Corporation
GRAND RAPIDS, MICH.: Kasle Steel Corporation
HAZEL PARK, MICH.: Meier Brass and Aluminum Co.
HILLSIDE, N.J.: Edgcomb Steel & Aluminum Corp.
HOUSTON, TEX.: Vinson Steel & Aluminum Co.
JERSEY CITY, N.J.: Joseph T. Ryerson & Son, Inc.
KANSAS CITY, MO.: Industrial Metals, Inc.
LOS ANGELES, CALIF.: Braico Metals, Inc.
LOUISVILLE, KY.: Southern States Iron Roofing Co.
MEMPHIS, TENN.: Southern States Iron Roofing Co.
MIAMI, FLA.: Southern States Iron Roofing Co.
MILWAUKEE, WIS.: Joseph T. Ryerson & Son, Inc.
NASHVILLE, TENN.: Southern States Iron Roofing Co.
OAKLAND, CALIF.: Earle M. Jorgenson Co.
RALEIGH, N.C.: Southern States Iron Roofing Co.
RICHMOND, VA.: Southern States Iron Roofing Co.
ST. LOUIS, MO.: Industrial Metals, Inc.
SOUTH BEND, IND.: Kasle Steel Corporation
UNION, N.J.: Mapes & Sprowl Steel Co.
WALLINGFORD, CONN.: Joseph T. Ryerson & Son, Inc.
WICHITA, KAN.: Industrial Metals, Inc.

SALES REPRESENTATIVES:
Morris P. Kirk & Son, Inc.
4050 Horton St., Emeryville 8, Calif.
Also: Fresno, Calif.; Phoenix, Ariz.

The Norwest Company
330 Second Ave. West, Seattle 99, Wash.

EASTERN SALES OFFICE:
Pioneer Aluminum Inc.
Richard G. Evans, Mgr.
23439 Michigan Ave., Dearborn, Mich.

SOUTHWEST REGIONAL SALES MANAGER:
Howard L. Hutchinson, P.O. Box 702, Dallas, Tex.

PIONEER ALUMINUM, INC.
Subsidiary of MORRIS P. KIRK & SON, INC.
5251 West Imperial Highway · ORegon 8-7621 · Los Angeles 45, Calif.

TOOLING PLATE
HEATING PLATENS
VACUUM CHUCKS
EXTRUSIONS

BOOKS . . .

ENTERPRISE IN OIL, *by Kendall Beaton, published by Appleton-Century-Crofts, Inc., 35 West 32 Street, New York, N. Y. Price, $7.50.* Subtitled "A History of Shell in the United States," this 816-page biography traces the 45-year growth of Shell Oil Co. from its earliest days as a small marketing firm with one producing unit to the present billion-dollar corporation. The history includes the story of Shell affiliates—Shell Chemical Corp., Shell Development Co., and Shell Pipe Line Corp.—as well as giving an account of other oil companies. In addition to writing a factual history, the author has managed to capture some of the color and excitment of the industry's pioneer days. The book is well illustrated—it has 149 halftones—and has an excellent index.

AIRCRAFT HYDRAULIC DESIGN, *by George Keller, published by Industrial Publishing Corp., 812 Huron Rd., Cleveland 15, O. Price, $3.50.* This book deals with hydraulic component and system design for high-speed, piloted aircraft and missiles. The first section is devoted to basic theory; the second to a discussion of design of system components; and the third to hydraulic power servos and high-temperature hydraulic problems. Fundamentals of transient analysis technique and frequency response method of servo testing are outlined, along with a discussion of damping ration. The chapter on high-temperature hydraulics describes present progress in fluids, seals, springs, metals, and other critical components, and speculates on future developments and techniques.

CHROMIUM, VOL. 2, *edited by Marvin J. Udy, published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y. Price, $11.00.* This is the second volume of a two-volume monograph which provides the latest information on the sources, properties, manufacture, and use of metallic chromium, chromium alloys, and chromium chemicals. Volume 1 covers the chemistry of chromium and its compounds, volume 2 the metallurgy of chromium and its alloys. This volume is divided into three sections: the first deals with the recovery of chromium from its ores; the second with the physical properties of chromium and its use in various alloys; and the final section with chromium in refractories. Both volumes are generously illustrated.

ENGINEERING USES OF RUBBER, *edited by A. T. McPherson and A. Klemin, published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y. Price, $12.50.* Written by 18 well-known rubber technologists, this book discusses not only what rubber is used for, but the why and how of its use. Although written primarily for engineers outside of the rubber industry, it contains unpublished data and information that will be useful to the rubber technologist. Among the subjects covered are the manufacture of rubber products, properties and behavior of rubber, application of rubber in industry and transportation, purchase of rubber by specification or special construction, and the structure of polymers and their rubber-like qualities.

ANOTHER Bendix ACHIEVEMENT

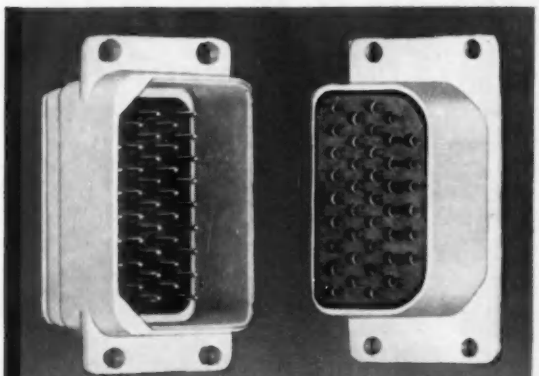
A resilient insert rack and panel connector

Here is the new and improved Bendix Type SR rack and panel electrical connector with outstanding resistance to vibration. The low engagement force of this connector gives it a decided advantage over existing connectors of this type.

Pressurization is easily accomplished. The resilient inserts press firmly against the shell wall holding the contacts in exact position. Insert patterns are available to mate with existing equipment in the field.

Adding to the efficiency of this rack and panel connector is the performance-proven Bendix "clip-type" closed entry socket.

Here, indeed, is another outstanding Bendix product that should be your first choice in rack and panel connectors.



OUTSTANDING FEATURES

Resilient Insert • Solid Shell Construction • Low Engagement Forces • Closed Entry Sockets • Positive Contact Alignment Contacts — heavily gold plated • Cadmium Plate—clear Irridite finish • Temperature range −67° to +250°F. • Easily Pressurized to Latest MIL Specifications.

Bendix SCINTILLA DIVISION of Bendix AVIATION CORPORATION
SIDNEY, NEW YORK

Export Sales and Service: Bendix International Division, 205 East 42nd St., New York 17, N. Y.
FACTORY BRANCH OFFICES:
117 E. Providencia Ave., Burbank, Calif. • Paterson Building, 18038 Mack Ave., Detroit 24, Mich. • 5906 North Port Washington Rd., Milwaukee 17, Wisc. • Hulman Building, 120 W. Second St., Dayton 2, Ohio • 2608 Inwood Road, Dallas 19, Texas • Boeing Field, Seattle 8, Washington • 1701 "K" Street, N.W., Washington 6, D. C.

FINEST *to the* COARSEST
IN PERFORATED METALS
AND WIRE CLOTH

and FERGUSON
specializes in perfection

When you need perforated metals, Ferguson is the place to send your requirements. Write to us about your specifications. We specialize in small perforations.

FERGUSON PERFORATING & WIRE CO.
130-140 ERNEST STREET, PROVIDENCE 5, RHODE ISLAND
SEND FOR CATALOGUE

Potter & Brumfield *engineering is in this picture*

Which P&B relay would you specify to keep conversation going over a

MOBILE 2-WAY RADIO?

MB Series

TS Series

MC Series

When one of America's leading manufacturers of electrical and electronic equipment began the design of a lightweight 2-way car radio, they were faced with several specific requirements in selection of relays. They had to be compact, light in weight and engineered to withstand the shock and vibration of off-the-road service. P&B engineering solved the problem with a modification of the TS series multiple switching relay.

In this application the TS relay has a dual personality. It connects the power supply unit to *both* the transmitter and the receiver. Power supply is controlled through the relay to either unit by the operator.

This is just another example of how P&B engineering is daily adapting standard types of relays or designing completely new types to meet specific requirements of new products. P&B's unique 25 years of engineering experience in relay applications is a source of quick, correct answers to your relay problems. Write today for new compact catalog.

P&B STANDARD RELAYS ARE AVAILABLE AT YOUR LOCAL ELECTRONIC, ELECTRICAL AND REFRIGERATION DISTRIBUTORS

ENGINEERING DATA

SERIES: TS. Miniature off-set springs telephone type.

CONTACTS: 5/64" dia. palladium (rated 3 amps.) ⅛" dia. pure silver (rated 5 amps.).

CONTACT ARRANGEMENTS: Up to 20 springs, maximum 10 in each stack, using any form combinations within max. limits.

VOLTAGE RANGE: DC: up to 220 V. AC: up to 230 V. (4 poles).

COIL RESISTANCE: 30,000 ohms. Shaded coil available for 60 cycle operation up to 230 V. using 4.7 VA nominal.

POWER REQUIRED: 100 mw. per movable arm.

TEMPERATURE RANGE: Stack insulation of XXX phenolic spacers: —55° C. to +85° C. Glass melamine spacers: —55° C. to +125° C.

TERMINALS: Pierced solder lug holes for 2 No. 16 hook-up wires. Also available: Push-on taper tab connectors.

ENCLOSURES: Dust cover or hermetically sealed enclosures: Round: With octal plug (Max. of 8 springs) Rectangular: With octal plug; 4 to 14 pierced solder lugs; header to fit 14-pin miniature relay socket; Multiple solder header 18 springs Max.

DIMENSIONS: (4 Form C) 1-19/32" L. x 1-1/16" W. x 1½" H. (open) (4 Form C) 1¾" L. x 1-13/32" W. x 2-3/16" H. (Hermetically sealed) (6 Form C) 1-29/32" L. x 1-5/16" W. x 2-9/16" H. (Hermetically sealed).

The standard TS structure with a life of 100 million operations will soon be available.

Potter & Brumfield, inc. PRINCETON, INDIANA

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY

Manufacturing Divisions also in Franklin, Ky. and Laconia, N. H.

See our catalog in Sweet's Product Design File.

AI TABLOID

(*Continued from page* 69)

Mobile Drilling, Inc., has purchased the earth drill business of the Buda Div. of Allis-Chalmers Mfg. Co. . . . Ryan Aeronautical Co. has purchased the machine tools and other equipment of Fricano Custom Products Co.

* * *

Thor Power Tool Co. has moved its executive offices from Aurora, Ill., to the Prudential Building in downtown Chicago. . . . Reliance Electric and Engineering Co. has moved to new quarters at 24701 Euclid Ave., Cleveland 17, O.

* * *

Dow Chemical Co. has developed a new magnesium alloy for aircraft and missiles.

* * *

Durez Plastics Div. of Hooker Electrochemical Co. will offer polyester molding compounds on a commercial basis in the Fall.

* * *

Civil Aeronautics Administration is building a new Aeronautical Center at Oklahoma City, Okla.

* * *

S. C. Johnson & Son, Inc., has opened a new subsidiary in Venezuela . . . Selas Corp. of America has formed a European subsidiary with headquarters in Geneva, Switzerland.

* * *

North American Aviation, Inc., has developed a new aluminum casting alloy said to be so strong that a square inch could lift ten Cadillacs.

* * *

Society of Industrial Packaging and Materials Handling Engineers has released a booklet on "Proposed American Standard Pallet Sizes."

* * *

Fairchild Engine Div. is constructing a new supersonic combustion laboratory at Deer Park, N. Y.

* * *

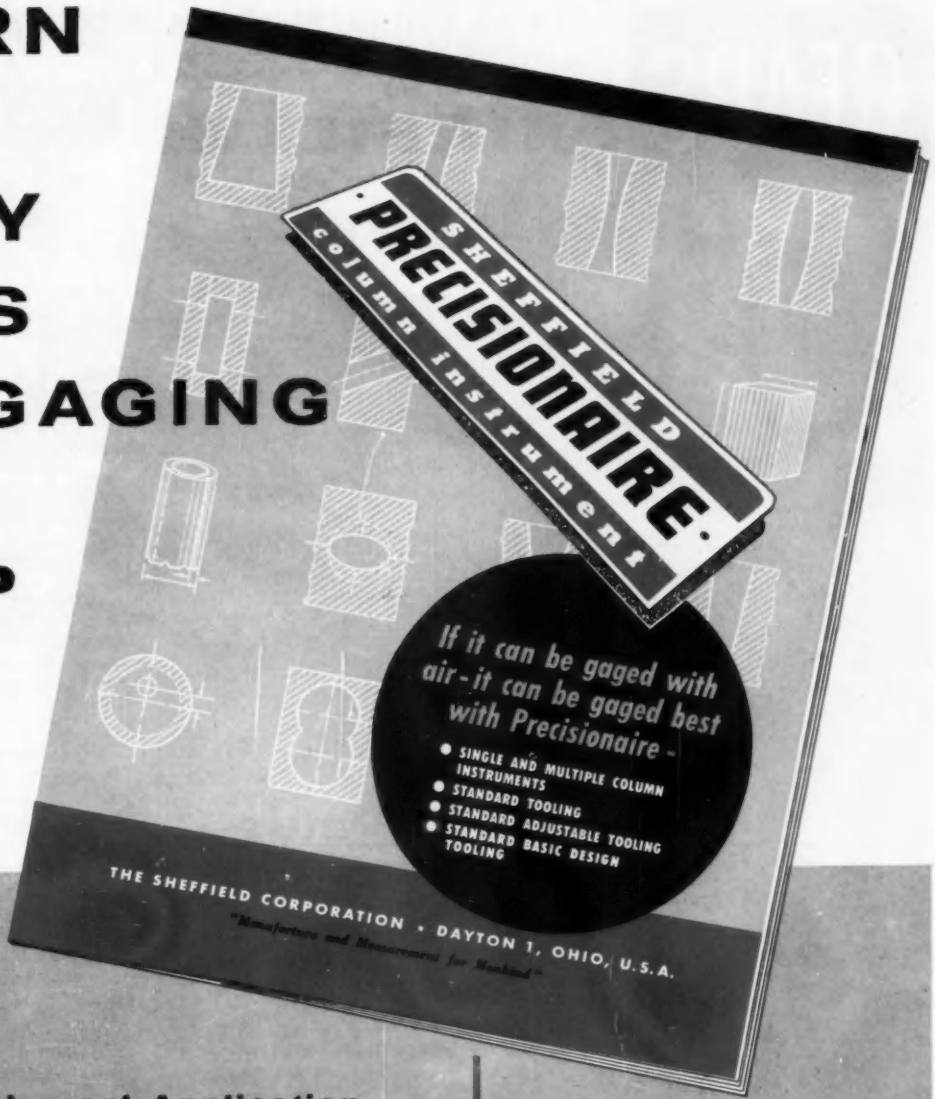
Automobile Safety Belt Institute is issuing a seal of approval for seat belts that meet SAE standards.

* * *

Porter-Cable Machine Co. has introduced a new riding mower powered by a Clinton 3.5-hp, four-cycle gasoline engine.

(*Turn to page* 408, *please*)

LEARN THE MANY WAYS AIR GAGING CAN HELP YOU


SHEFFIELD
PRECISIONAIRE
column instrument
If it can be gaged with air-it can be gaged best with Precisionaire -
• SINGLE AND MULTIPLE COLUMN INSTRUMENTS
• STANDARD TOOLING
• STANDARD ADJUSTABLE TOOLING
• STANDARD BASIC DESIGN TOOLING
THE SHEFFIELD CORPORATION • DAYTON 1, OHIO, U.S.A.
"Manufacture and Measurement for Mankind"

- Its Universal Application
- Its Significant Economy
- Its High Order of Precision
- Its Flexibility
- Its Consistent Performance
- Its Method of Operation

Write for this NEW BULLETIN - IPC 6-56

To the Sheffield Corporation,
Dayton 1, Ohio,
U. S. A. Dept. 4

the **SHEFFIELD** *corporation*

7718

GEARS by FAIRFIELD

A Plus Value IN ANY PRODUCT!

If GEARS are a vital part of the product you make, there is no finer recommendation for the QUALITY of your product than to be able to say it is equipped with "FAIRFIELD GEARS."

Long producers of the gears needed in high grade trucks and tractors, Fairfield now brings the same standards for GEAR PERFORMANCE to a wide variety of products: Agricultural Implements . . . Power Shovels . . . Machine Tools . . . Diesel Locomotives . . . Road Graders . . . Lift Trucks . . . Road Rollers . . . Pump Drives . . . Winches . . . Military Vehicles . . . and a host of others.

Fairfield's facilities are unexcelled. Here "under one roof" in a new and ultra modern plant, Fairfield has everything needed for producing all kinds of gears: spur . . . herringbone . . . spiral bevel . . . ground tooth spiral bevel . . . straight bevel . . . coniflex bevel . . . hypoid . . . zerol . . . worms and worm gears . . . splined shafts . . . differentials. Get acquainted with Fairfield—your inquiry will receive prompt attention.

Send for illustrated bulletin describing Fairfield's facilities.

FAIRFIELD
MANUFACTURING CO.
2303 S. Concord Rd.,
Lafayette, Indiana

For FINE GEARS

All TABLOID

(*Continued from page* 406)

George L. Nankervis Co. has been awarded a Ford study contract to determine the preparedness of the Navy gas turbine facility at Romulus, Mich.

* * *

Mexico is launching a census of automobiles.

* * *

Cornell Aeronautical Laboratory and Moog Valve Co. are expanding their Buffalo, N. Y., facilities.

* * *

Allegheny Ludlum Steel Corp. is producing at its Watervliet, N. Y., plant a carbon steel extrusion designed to save aircraft manufacturers 75 per cent in machining time.

* * *

Air Associates, Inc., has changed its name to Electronic Communications, Inc., and will move from New Jersey to Florida.

* * *

Firth Sterling Inc., and Kolcast Industries Inc., (subsidiary of Thompson Products, Inc.) have completed an agreement to enable the former to offer a complete range of induction vacuum melted super-alloys.

* * *

Seal-Peel, Inc., has moved into new quarters at Royal Oak, Mich. . . . Speed Selector, Inc., has moved into a new plant at Chagrin Falls, O.

* * *

Clark Equipment Co. is building a 300,000 sq ft facility in Chicago, Ill. It is also expanding its Construction Machinery Div. Plant in Benton Harbor, Mich., by 63,000 sq ft.

* * *

Sulzer Bros. has announced a so-called "doorless door" for automobile showrooms that uses a screen of air.

* * *

Union Carbide & Carbon Corp. plans to build a new fluorcarbon plant at Institute, W. Va. The company also plans construction of a new nuclear research center in Sterling Forest, N. Y.

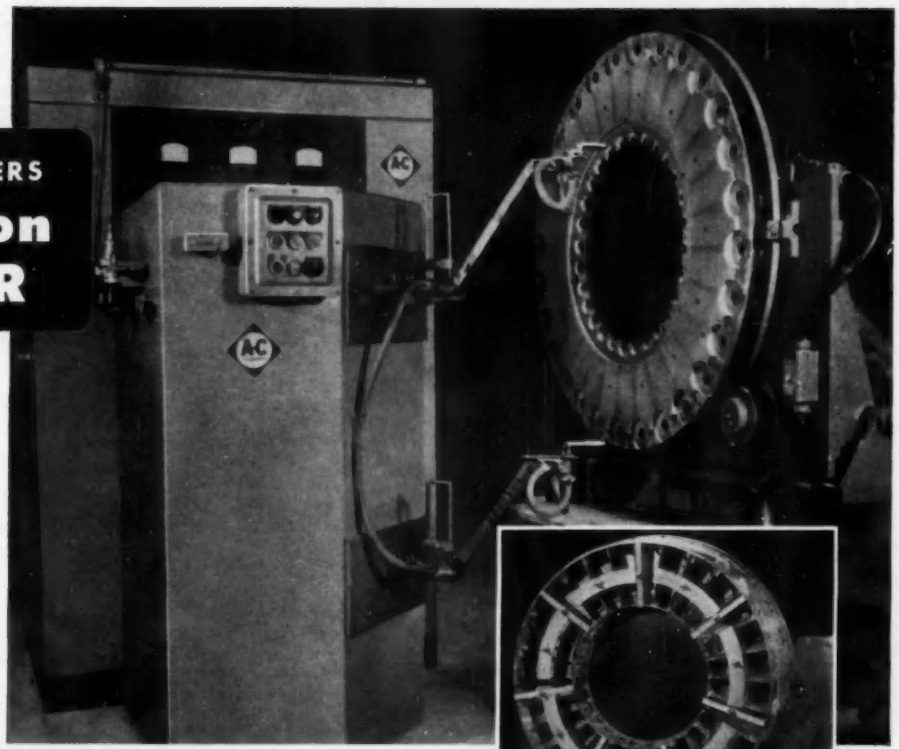
* * *

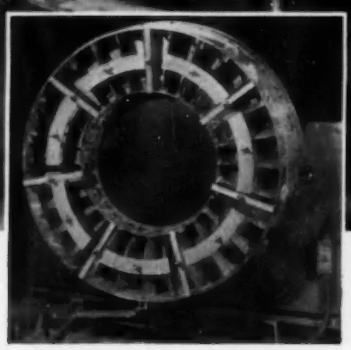
Binks Mfg. Co. has opened a new branch office, warehouse, and service center at Atlanta, Ga.

RHEEM MANUFACTURING COMPANY

Precision Brazes at Jet Speeds

ALLIS-CHALMERS
Induction HEATER





Each FACSIMILE Weldment of Vanes in Inlet Guide Assembly for J-57 Engine Completed in Seconds

Mr. HI Frequency is Ready and Able to Help You, Too

If your job is one of brazing, soldering, hardening, annealing, or heating, it will pay you to get all the facts on induction heating. Contact your A-C representative or write Allis-Chalmers, Industrial Equipment Division, Milwaukee 1, Wisconsin.

UTILIZING an Allis-Chalmers 25-kw induction heater, and an *A-C designed work fixture,* Rheem has a brazing setup as streamlined as the jet planes they help build. Rheem's production speed is particularly significant in that it is accomplished in the face of stringent precision requirements, demanding accurately controlled localized heating. Close tolerances are a requirement. Yet the Allis-Chalmers induction heater, brazing at high speed, produces facsimile weldments — each as smooth and perfect as the next.

Specify A-C—Here's Why

The use of high frequency power makes Allis-Chalmers induction heating as much as seven times faster than conventional heating methods. Properly designed work handling equipment also speeds production. An automatic timer and other controls, standard on Allis-Chalmers units, promote precision operation. Allis-Chalmers extras — extensive laboratory facilities, unparalleled application experience, factory supervised installation — guarantee complete dependability . . . continuous service.

A-C ALLIS-CHALMERS

ALLIS-CHALMERS

A-5295

Precision?

Dependability?

it's AUTOMATIC!

STRESS RELIEVING

at Automatic puts "ZING" in your springs

No matter how accurately a coiled spring meets specifications, it will not stand up in actual use unless the internal stress of the metal (caused by coiling) is properly relieved by a prolonged low temperature heat-treating process.

Automatic's stress relieving know-how determines the *best possible* length and degree of "cooking heat," thus guaranteeing the user the optimum in lasting resiliency and load-carrying capacity.

Send for new illustrated brochure giving information for the specifying of springs and other data.

for quality springs "Automatically" think of

AUTOMATIC

SPRING COILING CO.

4048 West Thorndale Ave., Chicago 30, Ill.

MEN *in the* NEWS

(*Continued from page* 75)

Bendix Aviation Corp., Utica Div.—**Dan S. Tilden** has been appointed director of sales and service, and **W. S. Allison** has been named sales manager.

Ford Motor Co.—**Floyd A. Fason** was appointed manager of the Buffalo assembly plant, succeeding **William J. Swallow**, now manager of the Chicago Ford Div. assembly plant.

Wilkening Manufacturing Co.—**Helmuth G. Braendel** was promoted to vice-president in charge of engineering; **John O. Lutz**, chief engineer; and **Henry O. Moffett**, factory manager.

Massey-Harris-Ferguson, Inc.—**Albert A. Thornbrough** was appointed president.

Radioplane Co.—**M. W. Tuttle** has been made vice-president and general manager.

North American Aviation, Inc.—**John N. Stewart** was named director of labor relations.

Huppower Div., Hupp Corp.—**R. E. Brown** has been elected president.

Standard Products Co.—**Beecher B. Cary** was elected vice-president of engineering and research, and **John R. Finn** was promoted to general sales manager.

National Acme Co.—**Raymond E. Channock** was elected vice-president and treasurer.

Kenworth Motor Truck Co.—**Daniel T. Wetta** was appointed sales manager for distributor sales.

Brush Electronics Co.—**David M. Gaskill** has become manager of industrial equipment sales.

Skinner Div., Bendix Aviation Corp.—**Charles Foley** is now project sales engineer.

Leece-Neville Co., Original Equipment Div.—**Robert G. Hill** has been made sales manager.

Bostrom Manufacturing Co.—**Allison K. Simons** is now director of engineering and research.

U. S. Rubber Co., Footwear and General Products Div.—**George H. Callum** was made general sales manager.

Putnam Tool Co.—**Melvin L. Weinberg** is now vice-president in charge of sales and service.

Bakelite Co.—**H. F. Robertson** was made manager of technical planning.

(*Turn to page* 412, *please*)

How T&W Technique serves the off-the-highway truck industry better

At the right are two examples of the *special* results produced by *T & W Technique* to meet the particular needs of makers of off-the-highway trucks. T & W offers you a completely coordinated team of engineering and production facilities, to furnish forged or stamped parts or assemblies which usually cost you less at your point of assembly.

Write today for full information.

SALES OFFICES NEW YORK • PHILADELPHIA
CHICAGO • INDIANAPOLIS • DETROIT
HOUSTON • LOS ANGELES

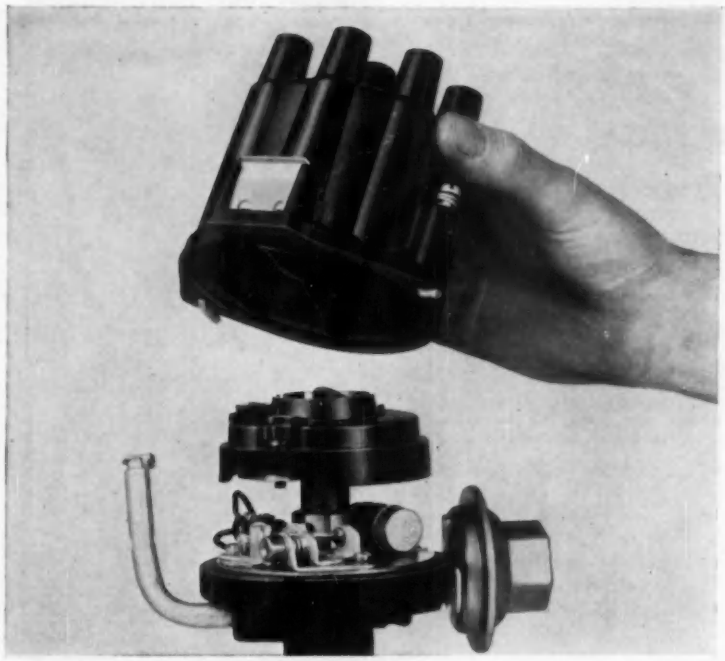
Forgings and Deep Drawn Stampings

Stampings for heavy trucks successfully produced by the wide range of Transue press equipment. Assembly operations completed by T & W include the sump ring, gasket flange reinforcements, and baffles, riveted and welded in place.

Off-the-highway truck axle, weighing 400 lbs., forged from C-1050 steel, delivered to truck builder heat-treated and cleaned, ready for machining and final assembly.

FORGINGS AND DEEP DRAWN STAMPINGS

TRANSUE & WILLIAMS
Over 50 years of experience
ALLIANCE, OHIO—USA



Where else can
DUREZ PHENOLICS
do the job best?

Here is an automotive necessity that could start you on a profitable line of inquiry.

When you look into it, the same properties that make Durez phenolic plastics unsurpassed for the distributor cap, rotor, and coil top could well be applied to other applications resulting in fewer assembly operations, dependable long-term performance, and reduced unit cost.

Because they mold readily in complex shapes and need little or no finishing, Durez phenolics are economical to use. They are dimensionally stable—can be specified with confidence for close-tolerance components. Resistance to impact and to extremes of temperature, electrical non-conductivity, and chemical inertness are other properties where Durez measures up to engineering standards.

These unique properties are provided in remarkable combinations in new Durez thermosetting molding materials formulated with glass fiber and other reinforcing fillers. Your molder can provide valuable help... or call on our field service for technical counsel.

CHECK TO SEE HOW YOU CAN USE THESE PHENOLIC PROPERTIES:

- Dimensional stability
- Non-conductivity
- Resistance to heat and cold
- Impact strength
- Resistance to moisture
- Chemical resistance
- Moldability in intricate shapes
- Moderate cost

DUREZ® Phenolic Plastics that Fit the Job

DUREZ PLASTICS DIVISION
HOOKER ELECTROCHEMICAL COMPANY
2003 Walck Road, North Tonawanda, N. Y.

HOOKER CHEMICALS PLASTICS

MEN *in the* NEWS

(*Continued from page* 410)

Besly-Welles Corp., Carbide Div.—**Russell V. Ringquist** has been appointed sales manager.

Kelsey-Hayes Co., Inc.—**B. E. Derry** has been named general manager of the French & Hecht Div., and **Walter D. Hart** is now assistant sales and engineering manager of the Aviation Div.

Chrysler Corp.—**William M. Schmidt** has became executive stylist.

National Malleable and Steel Castings Co., Railway Div.—**Mellor W. Stevenson** has been made general manager of sales.

Interstate Drop Forge Co.—**Charles W. Stone** has been elected president.

Harrison Radiator Div., General Motors Corp.—**Claude V. Hawk** has been made an assistant chief engineer.

Acme Steel Co.—**Bartlett Richards** was named vice-president and presidential assistant.

L. A. Young Spring & Wire Corp.—**Don Cannon** has become manager of the three Chicago plants.

Crucible Steel Co. of America—**Daniel A. Porco** is now manager of development.

Campbell Machine Div., American Chain & Cable Co., Inc.—**Curtis D. Cummings** is now sales manager.

Bolta Products Div., General Tire & Rubber Co.—**Sumner L. Trilling** was named general sales manager.

Eaton Manufacturing Co.—**Philip J. D'Arcy** has been appointed assistant sales manager of the Saginaw Div., succeeding **James R. Harrison**, now with the Sales Dept. of the Valve Div.

Joseph T. Ryerson & Son, Inc.—**Scott Vrooman** was named sales manager, Detroit, and **Bruce D. Clausonthue** succeeds him as a sales manager, Chicago.

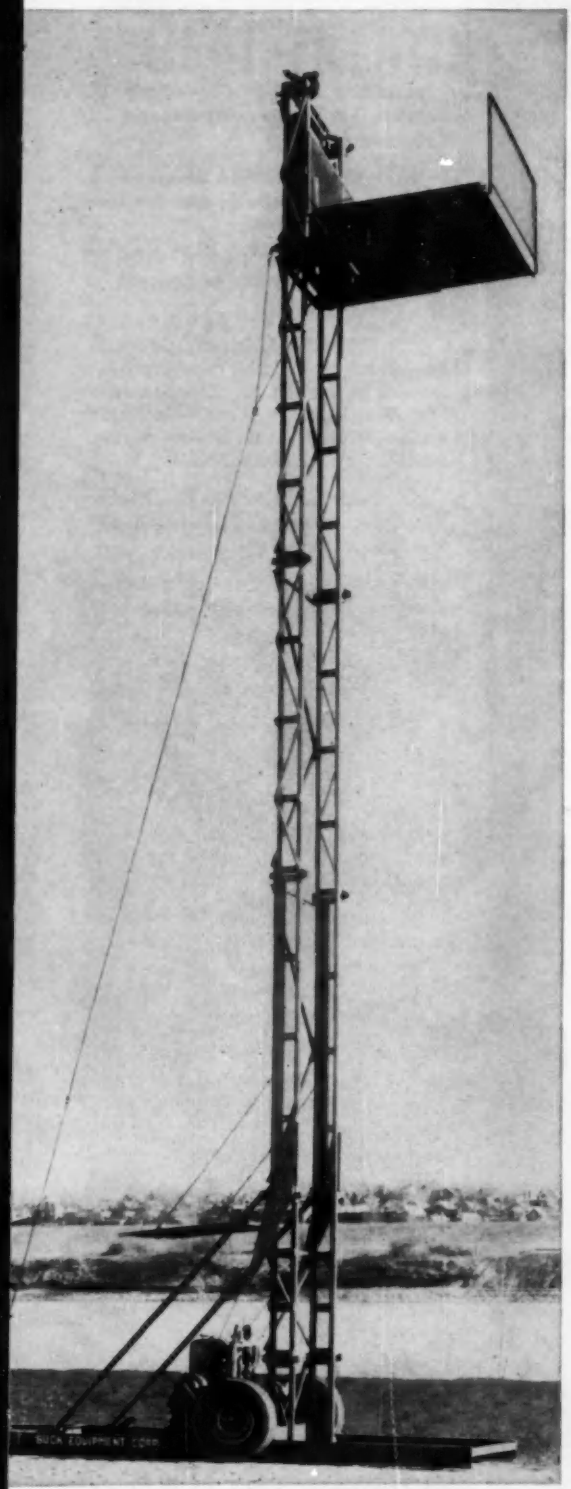
Allen Manufacturing Co.—**M. Raymond Whigham** is now advertising and sales promotion manager.

Westinghouse Electric Corp.—**Karl H. Neulinger** is now commercial engineering manager of the Miniature Lamp Dept.

Good year Tire & Rubber Co.—**Frederick B. Kelso, Jr.**, is now assistant manager of the Service Dept.

(*Turn to page* 414, *please*)

How Shelby Seamless Tubing makes a "Buck" go farther



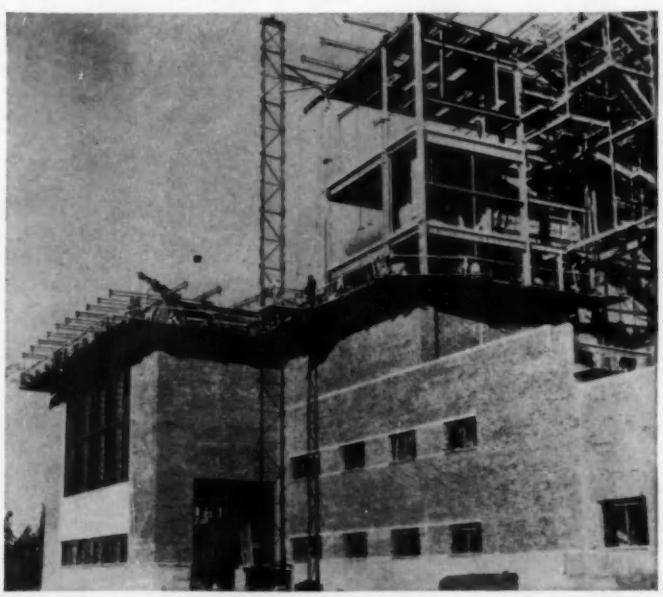
The platforms of these Buck Equipment Corporation Hoisting Machines* *do* go farther—farther *up,* thanks to Shelby Seamless. Although standard tower heights range from 25 to 40 feet, some of these unique heavy-duty rigs boast towers up to 150 feet in height!

The slender tower of the Buck Portable Hoisting Machine is constructed of 2⅜" OD x .120" wall, cold drawn sections of Shelby Seamless Mechanical Tubing, which afford both the structural support for the equipment and the track on which the platform moves. Self-erecting, the tower unfolds like a jackknife—raises or lowers in 2 minutes, 11 seconds. Operating power is supplied by a 21 H. P. air-cooled engine.

Here is an application where the use of seamless tubing is virtually mandatory. What other material could supply the combination of high strength, light weight, and flexibility needed to make a completely portable hoist that would unlimber in minutes, then send a 2000-pound load of building bricks soaring up its vertical track at the rate of 140 feet per minute?

Shelby Seamless Tubing possesses the strength, uniformity and dimensional accuracy that make it ideal for structural applications such as this. Produced to exacting standards by the world's largest manufacturer of tubular steel products, Shelby Seamless is available in a wide range of diameters, wall thicknesses, various shapes and steel analyses. You are invited to consult our engineers at any time. They will make a study of your product requirements and will help you to apply Shelby Seamless to your specifications.

**Manufacturer's name on request.*



NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
(Tubing Specialties)

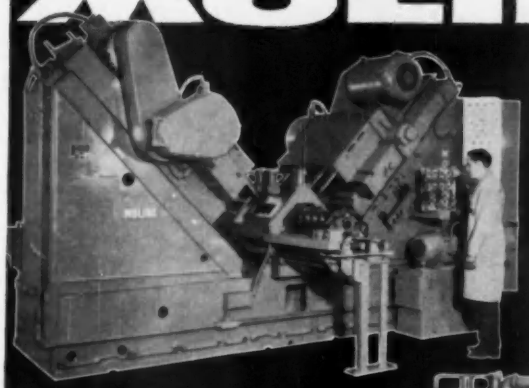
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS • UNITED STATES STEEL EXPORT COMPANY, NEW YORK

SHELBY SEAMLESS MECHANICAL TUBING

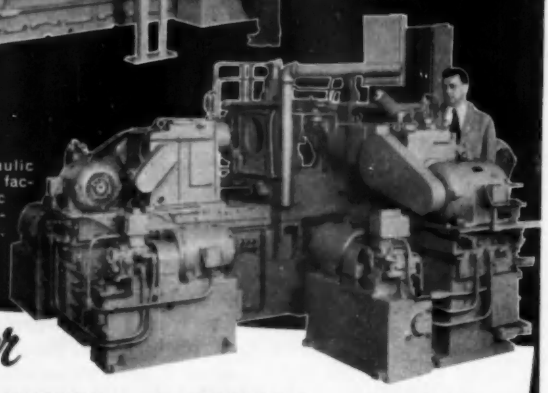
WALLS WITHOUT WELDS

UNITED STATES STEEL

MOLINE



No. 13CB V-type cylinder boring unit is used either as an individual machine or as one of several automated units in a transfer line for boring automotive engine cylinders.



MR138 four-way, hydraulic feed, drilling, boring and facing machine with hydraulic clamping fixture for tractor main frame housings.

For Greater

PRODUCTION . . . EFFICIENCY . . . SAVINGS

Use an individually designed "Hole-Hog" Machine Tool for such jobs as...

- **Multi-Spindle Boring**
- **Single and Multi-Spindle Honing**
- **Straight Line Multi-Drilling**
- **Adjustable Spindle Drilling**
- **Vertical and Way-Type Fixed Center Drilling, Boring and Tapping**
- **Special Multiple Operation Machine Tools**

OVER 55 YEARS OF MACHINE TOOL ENGINEERING EXPERIENCE IS AT YOUR SERVICE. TELL US YOUR PARTICULAR PROBLEM

106

HD67 hydraulic rail feed, straight-line type, multi-spindle drilling machine. Six-foot rail length as shown; also available in eight and ten-foot lengths.

No. 116-U hydraulic rail feed, universal joint type driller with 16 two-speed and neutral top drivers plus four-speed quick, change gear box. Spindles illustrated are 1⅛" drill capacity each in mild steel.

MOLINE TOOL CO. HOLE-HOG MOLINE, ILLINOIS

MOLINE TOOL COMPANY

REPRESENTATIVES IN PRINCIPAL CITIES

100 20TH STREET • MOLINE, ILLINOIS

MEN *in the* NEWS

(*Continued from page* 412)

Seiberling Rubber Co. — **Orris H. Johnson** has been named manager of tire design.

Vickers, Inc.—**Conrad Hohmann** is now assistant chief engineer for special airborne devices.

Moog Valve Co., Inc.—**Kenneth J. McIlraith** has been made administrative vice-president.

Heli-Coil Corp., Sales Div.—**John E. Fasano** has been named sales manager; **Bayeux B. Morgan, Jr.**, assistant sales manager; **Robert H. Kane**, advertising manager; and **J. Laurence Sutton**, manager of customer service.

Goodyear Tire & Rubber Co., Racing Tire Div.—**Parrvyn R. Lawson** has been placed in charge.

Chrysler Corp., Stamping Div.—**Clarence G. Bauer** is now manager of quality control.

Chrysler Div., Chrysler Corp.—**S. M. Baltzly, Jr.**, has been appointed purchasing agent.

Volvo Distributing, Inc.—**Erik J. Hansen** has been appointed general sales manager.

Permatex Co., Inc.—**Epes W. Sargent** has been appointed director of merchandising.

Bullard Co.—**Edward A. Sundstrom** is now district manager, Chicago sales office.

World Bestos—**Edward G. Braun** is now district manager of Territory 18.

Jervis B. Webb Co.—**Mike M. Gruich** and **Howard M. Hartrick** are now district manager and sales engineer, respectively, for the Northern Ohio area.

Bell Aircraft Corp., Aircraft Div.—**John W. Rane, Jr.**, was made director of engineering and sales; **George D. Ray**, chief engineer; **Stanley W. Smith**, chief project engineer, and **John J. Weisbeck, Jr.**, contracts manager.

Greer Hydraulics, Inc.—**B. R. Teree** was made chief engineer.

BullDog Electric Products Co.—**M. V. Kessler** was chosen central regional manager.

Barber-Colman Co., Machine and Small Tool Div.—**Peter R. Noling** is now sales representative in southern California.

THE ONE BEST WAY TO SELECT HEAT TREATING EQUIPMENT

Talk it over with the most experienced furnace experts you can find

That is exactly what we can offer you at Lindberg. A design and engineering staff concerned only with the development of equipment for applying heat to industry. This staff produces the most complete line of such equipment in the industry—heat treating furnaces, melting furnaces, ceramic kilns, high frequency induction units; big ones, small ones, electric or fuel-fired, built in our own plant or field-erected.

Whatever your requirements Lindberg's staff will study them without prejudice recommending the correct equipment to fill them whether you need only a simple heat treating furnace or a specially designed and developed installation to answer an exceptional problem in a newly-efficient way. You can be sure you have the right answer when you leave it to Lindberg. Get in touch with your nearest Lindberg Field Representative. (See your classified telephone directory or write us direct.)

This Lindberg Carbonitriding and Carburizing Furnace (electric or fuel-fired) is one of the most widely-used heat treating units in the world.

LINDBERG

ENGINEERING COMPANY

2491 West Hubbard Street, Chicago 12, Illinois

Los Angeles Plant: 11937 S. Regentview Ave., at Downey, Calif.

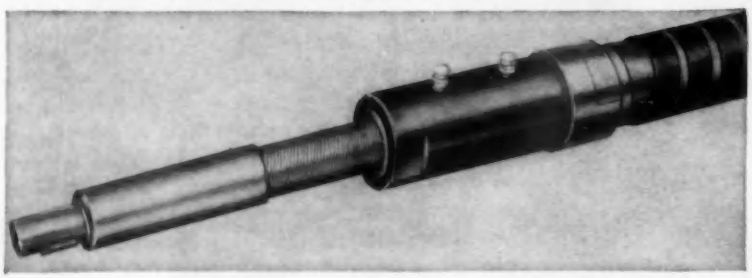
Canada—Sfco Lindberg, Toronto

If you're at the Western Metal Show look in on Lindberg at Booth 478

STOW FLEXIBLE SHAFTING

The Ideal PTO Drive

1¼" flexible shaft under tractor-trailer transmitting 10 HP.



1¼" core assembly pulled out of casing. Note steel-backed bronze sleeve bearing.

Here are five big reasons why flexible shafting is an ideal power take-off drive on trucks and tractor trailers.

FLEXIBLE SHAFTING:

1. Can connect a drive shaft and a driven shaft which are working at different angles and located in different planes.
2. Eliminates the need for accurate alignment.
3. Eliminates dangerously exposed revolving parts; no safety guards required.
4. Replaces connections affected by vibration.
5. Is economical because it is so easy to install and maintain.

Available with built-in bearings and couplings in sizes from ¼ inch to 1¼ inches in diameter—STOW flexible shafting can help solve your trucking and maintenance problems *in advance*. The know-how of 82 years' experience goes into every STOW flexible shaft!

STOW flexible shafts are being used on trucks and tractor-trailers to:

- Operate pumps for petroleum, other liquids and hydraulic pumps on dump trailers.
- Operate conveyors for grain and coal.
- Operate compressors on refrigeration trucks.

Our Engineering Department will be glad to work with you on any special drive problems. For complete data on flexible shafting sizes, torque capacities, and other specifications, write for STOW Engineering Bulletin, No. 570, and Tractor-Trailer Bulletin, No. 542.

STOW

STOW MANUFACTURING CO.

393 Shear St. Binghamton, New York

Industry News

(*Continued from page* 71)

Dodge Delivery Truck Offered Commercially

Prompted by interest in its ¾-ton forward control delivery truck built for the Post Office, Dodge is now making the unit available to commercial operators. It will be added to the company's ½ and ¾-ton lines.

Built on a 95-in. drop frame, the truck has a standard Dodge truck chassis components and is powered by a 120-hp, L-head, six-cylinder engine. Controls have been modified for stand-up driving; overall length is 169 in. Bodies for the unit are made by Boyertown Auto Body Works.

Air Brakes May Appear On One '58 Automobile

Air brakes for passenger cars are getting some attention and may be used on one 1958 car line. Coming adoption of air suspension will require an air supply and make practical the use of air equipment, such as brakes.

Almold Process Proves Useful For Diesel Supercharger Rings

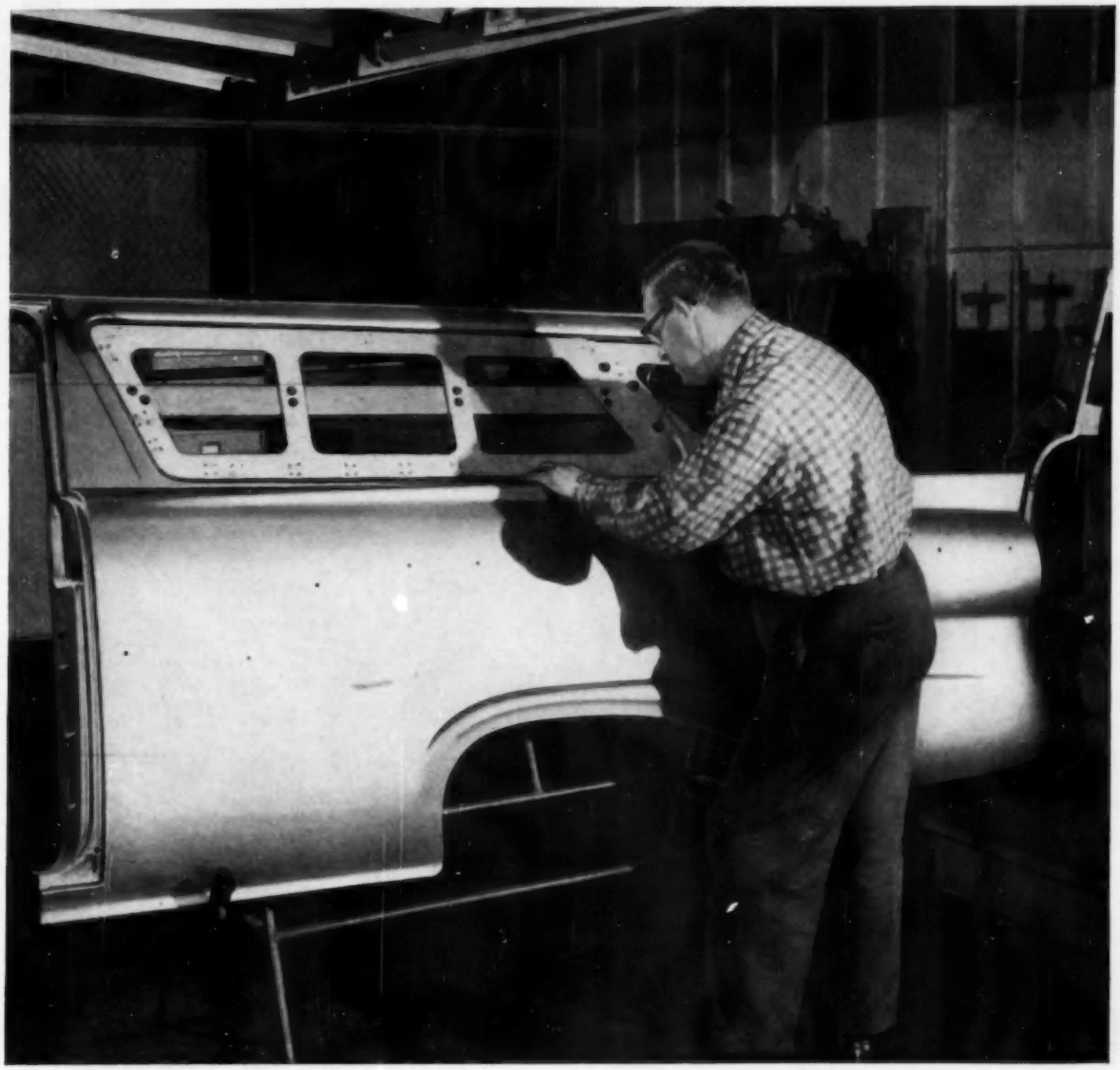
Allegheny Ludlum Steel Corp. has developed an unusual method of producing turbosupercharger nozzle rings for use in Diesel engines—where the high temperature of exhaust gases is a major factor.

The Almold casting process is now utilized by Allegheny Lundlum in making the nozzle rings for turbochargers built by ALCO Products, Inc., They are installed on ALCO Diesel engines used in a variety of applications, including Diesel-electric locomotives.

Allegheny Ludlum changed from the sand core casting method to the Almold process as a result of research by engineers at its Forging and Casting and Watervliet Plants.

In the Almold process, type 321 stainless steel nozzle ring vanes are placed in a box cavity. The pieces are accurately positioned, and then Type 410 stainless steel is cast around the vanes.

Tolerance is .010. The outside diameter of the nozzle ring hub is cast to a finish size between .000 to plus .020 tolerance, with ⅛ in. to finish on the face. The exhaust gases that beat upon the nozzle ring under operation on a Diesel engine reach 1245 F for extended periods of time.



Lightweight magnesium fixture checks Ford station wagons

This magnesium checking fixture is used by Ford Motor Company in assembling Ford two-door station wagons.

It helps to maintain quality by checking the daylight opening relationship to the glass run channel and regulator retainer brackets in the quarter panel welded assembly. It assures accurate location of the glass run retainers and window regulator mounting holes. The fixture is dimensionally stable and has stood up well under continuous rough handling. One man can easily lift and manipulate it with one hand.

Jigs and fixtures made with magnesium are always easy to handle because they weigh much less than steel or aluminum. Magnesium tooling plate is uniformly flat, low in cost and easy to machine, fabricate and weld.

For the full story on magnesium tooling plate contact your nearest supplier of Dow magnesium or write to us.

THE DOW CHEMICAL COMPANY, Midland, Michigan, Department MA 1416RR.

AVAILABLE FROM STOCK AT: Copper and Brass Sales, Inc., Detroit, Michigan • Fullerton Steel and Wire Co., Chicago, Ill. Hubbell Metals Inc., St. Louis, Mo. • A. R. Purdy Co., Inc., Lyndhurst, N. J. • Reliance Magnesium Co., Los Angeles, Calif. Vinson Steel and Aluminum Co., Dallas, Texas.

YOU CAN DEPEND ON DOW

Body Parts and Moulding Formers...

offer production of 400 to 800 parts per hour

The new AHS (Automatic High Speed) machine combines stretch and compression methods of Radial Draw Forming to produce parts to accurate and permanently stable contours. These machines are automatic fed, automatic loading and automatic ejecting. The BATH machine provides designers with greater freedom in shapes and substantially lower production costs. Initial capital investment is lower with these machines than in other methods of manufacture.

Write for literature covering *all* the features of the new BATH AHS machine.

THE CYRIL BATH COMPANY

32332 AURORA ROAD • SOLON, OHIO
(LOCATED IN THE GREATER CLEVELAND AREA)
Manufacturers of Radial Draw Formers • Dies • Tools
Press Brakes • Tangent Bending Sequence Presses • Press Type Brakes • Special Machines

Hardtop auto body roof side rails with incorporated drip moulding and similar parts involving changing cross section and offsets throughout the curvature are suitable for production on BATH AHS machines.

New Defense Facilities

SUPPLEMENTING the list of Certificates of Necessity issued up to January 23, authorizing new or expanded defense plant facilities for the manufacture of automotive and aviation war goods which was published in the February 15 issue, page 102, of AUTOMOTIVE INDUSTRIES, the following additional certificates were announced by the Office of Defense Mobilization, covering January 24 to February 20, inclusive.

The figure appearing in parentheses is the percentage authorized in respect to actual fast tax write-offs.

AEROJET-GENERAL CORP., Azusa, Calif.
Research and development—$895,000 (65)

ARO EQUIPMENT CORP., Bryan, Ohio
Military aircraft equipment—$2,716,398 (60)

BABCOCK & WILCOX CO., Tubular Products Div., Beaver Falls, Pa.
Titanium processing facilities—$1,200,000 (65)

BELL AIRCRAFT CORP., Wheatfield, New York
Research and development—$860,000 (60)

BENDIX AVIATION CORP., Scintilla Div., Sidney, New York
Military aircraft engine components—$900,000 (40)

BOEING AIRPLANE CO., Wichita Div., Wichita, Kansas
Military aircraft $141,960 (65)

BRIDGWATER MACHINE COMPANY, Akron, Ohio
Military aircraft parts—$72,500 (45)

CHANCE VOUGHT AIRCRAFT, INC., Dallas, Texas
Wind tunnel for testing military aircraft and missiles—$4,006,000 (80)

CURTISS-WRIGHT CORP., Marquette Metal Prod. Div., Cleveland, Ohio
Military aircraft components—$674,846 (65)

EX-CELL-O CORPORATION, Fostoria, Ohio
Military aircraft engine parts—$66,129 (65)

FAIRCHILD ENGINE AND AIRPLANE CORP., Fairchild Aircraft Div. Hagerstown, Maryland
Military aircraft parts—$85,446 (65)

FAIRCHILD ENGINE & AIRPLANE CORP., Stratos Div., Bay Shore, L. I., New York
Military aircraft parts—$110,289 (65)

GOODYEAR TIRE AND RUBBER CO. OF CALIF., Los Angeles, Calif.
Military aircraft components—$134,000 (40)

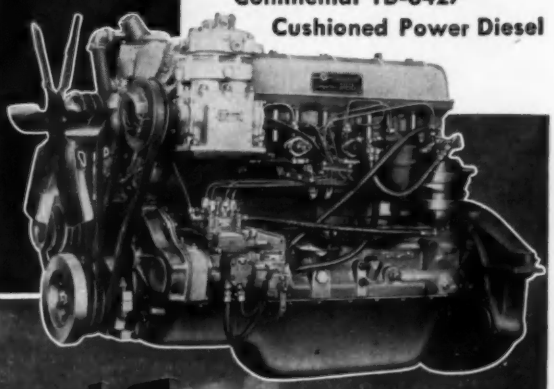
KENNECOTT TITANIUM DEVELOPMENT CORP.
Research and development—$10,290,500 (60)

LOCKHEED AIRCRAFT CORP., Missile Systems Div., Palo Alto, Calif.
Research and development—$850,000 (60)

(*Turn to page* 420, *please*)

CONTINENTAL
®CUSHIONED POWER DIESELS

"paid for themselves in one year in fuel savings alone"



Continental TD-6427
Cushioned Power Diesel

Cole's Express of Bangor, Maine has now standardized on the Continental TD-6427 Cushioned Power Diesel for its entire fleet of highway haulers. Here, in the words of Galen L. Cole, its president, are the reasons why:

1. **Lightest on the market**
2. **Least expensive to purchase initially**
3. **Least expensive to overhaul**
4. **Equal or superior in fuel economy**

"We have experimented with many other Diesels," Mr. Cole writes, "but find none that give better mileage. Shop labor and materials have been down. We changed many gasoline engines to this Diesel, and at the end of the first year's operation, had completely paid for the new engines by the saving in fuel costs alone."

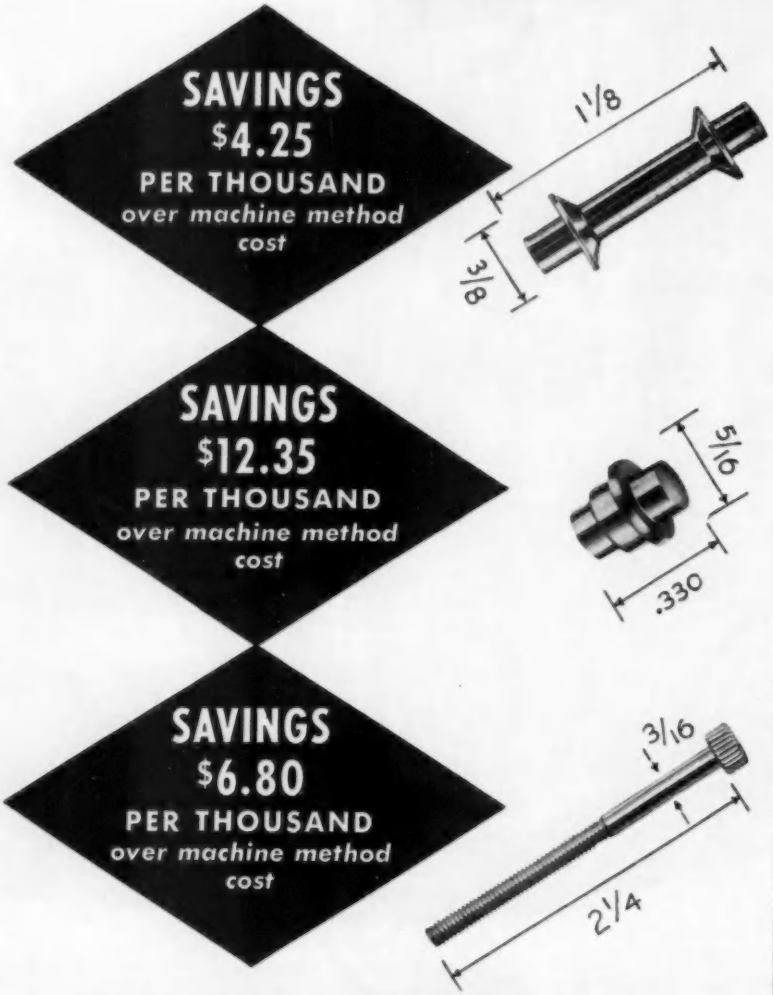
Handsome orange-and-silver Cole units like this one, with blue, red and white seal and green map, are now familiar sights along the Eastern Seaboard. They are a striking advertisement not only for the State of Maine but also for dependable Continental Diesel power.

SERVICE FACILITIES AND GENUINE RED SEAL PARTS ARE AVAILABLE EVERYWHERE

Continental Motors Corporation
MUSKEGON • MICHIGAN

® CONTINENTAL MOTORS · Powerful as the Nation · AMERICA'S STANDARD

6 EAST 45TH STREET, NEW YORK 17, NEW YORK • 6218 CEDAR SPRINGS ROAD, DALLAS 9, TEXAS • 3817 SOUTH SANTA FE AVENUE, LOS ANGELES 58, CALIFORNIA • 1252 OAKLEIGH DRIVE, EAST POINT (ATLANTA) GEORGIA



COLD-HEADING

SAVES YOU MONEY ON JOB-DESIGNED SMALL PARTS AND FASTENERS

Cold-Heading is the most versatile, most economical method for producing your fasteners and small parts. These case histories are typical of thousands of money saving jobs we've done for our customers. May we quote on your requirements? Write today for the Hassall Catalog.

John Hassall, Inc., P.O. Box 2194, Westbury, Long Island, N.Y.

Hassall

SINCE 1850

NAILS, RIVETS, SCREWS
AND OTHER COLD-HEADED
FASTENERS AND SPECIALTIES

(*Continued from page* 418)

LOCKHEED AIRCRAFT CORP., Missile Systems Div., Van Nuys, Calif.
Research and development—$839,465 (65)

LOCKHEED AIRCRAFT CORP., Marietta, Georgia
Military aircraft—$254,268 (65)

THE GLENN L. MARTIN CO., Jefferson County, Colorado
Military aircraft and missiles—$68,933 (65)

GLENN L. MARTIN COMPANY, Orange County, Florida
Guided missile facilities—$7,785,000 (60)

GLENN L. MARTIN COMPANY, Baltimore, Maryland
Military aircraft—$241,250 (60)

NORTHROP AIRCRAFT, INC., Hawthorne, Calif.
Military aircraft—$193,500 (60)

SOLAR AIRCRAFT COMPANY, San Diego, Calif.
Military jet engine components—$577,783 (65)

THOMPSON PRODUCTS, INC., Long Beach, Calif.
Military aircraft parts—$445,717 (65)

TITANIUM METALS CORP. OF AMERICA, Toronto, Ohio
Titanium processing facilities—$9,098,000 (65)

TITANIUM METALS CORP. OF AMERICA, Brackenridge, Pa.
Titanium alloy sheet facilities—$225,000 (65)

German Aviation Contracts

(*Continued from page* 313)

phibians, and the following helicopters: 26 Sikorsky S58s, 14 Bell 47Gs, and the above-mentioned 26 Vertols. From other countries 553 additional planes are being purchased. On loan, or as outright gifts, the United States and Canada are furnishing the German Air Force with 75 F86 Mk V Sabres, 29 Harvard Mk IV trainers, and 20 Piper L18Bs, plus the 558 Sabres, mentioned above.

Curtiss-Wright, Lycoming Sign Up Licenses

After considerable jockeying among German, American and other foreign airplane engine manufacturers, the starting line-up for the production race now shows the following entries:

Negotiations are in progress between the Curtiss-Wright and Daimler-Benz AG interests and the German Government for the construction of a plant to build engines and accessories in the Palatinate, close to many NATO fields. Daimler-Benz figured recently in the Curtiss-Wright-Studebaker agreement, in which the German builders of the Mercedes automobiles and Unimog trucks were mentioned as possible licensors of its compression-ignition engines, and truck designs to Studebaker. Presumably, Daimler-Benz would receive the Cur-

Design "Low Cost" Into YOUR Equipment

GITS

World's Largest Selection of Low-Cost Lubricating Devices

LUBRIKIT . . . An assortment of 95 oil cups of 29 different types. Gits sales records show these oilers are most used for replacement and maintenance. Contents of each separate bin are clearly described on Inside Cover.

Special Introductory Price
Just **$14.95** F.O.B. Factory
Satisfaction or your money back

CLIPS FOR ATTACHING TUBING

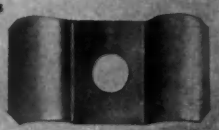
When ordering, specify ¼", 5/16" or ⅜" tubes. Style TF.

Single Clips

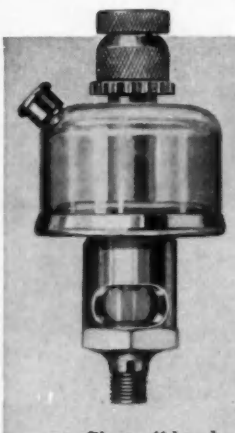
Double Clips

3-Tube Clips

4-Tube Clips

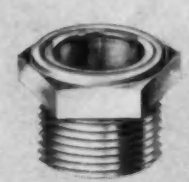


Double Clips — Wing Type



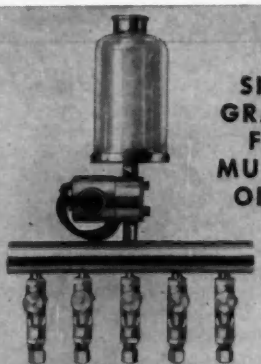
SIGHT GRAVITY FEED OILERS

Rate of oil flow regulated by needle valve, directly observed through sight glass in stem. Shut-off knob does not affect needle valve adjustment. Visible oil supply. Non-breakable. Tops in convenience and dependability, at low cost. Style NFU—No. 3602-A.



GEAR CASE GAUGES

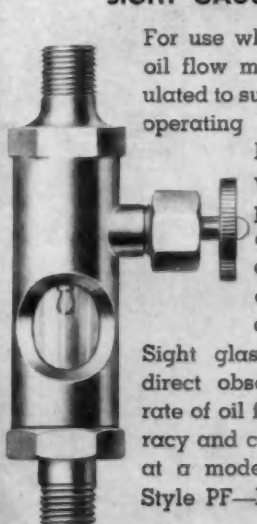
This oil gauge plug permits instant checking of oil level within a transmission or gear case. For use where construction permits insertion in tapped hole. A valuable addition to any such equipment — at very low cost. Style BW—No. 4042.



SIGHT GRAVITY FEED MULTIPLE OILERS

This one unit replaces 3 to 8 individual oilers. Maximum practicality in a small central lubrication system. Positive cut-off during idle periods. Individual vibration-proof needle valve adjustments. With solenoid control (Illustrated): Style MDS—No. 4685-A. Without solenoid: Style MD.

SIGHT GAUGES



For use where rate of oil flow must be regulated to suit changing operating conditions. Needle valve permits extremely accurate adjustment of oil feed. Sight glass provides direct observation of rate of oil flow. Accuracy and convenience at a moderate price. Style PF—No. 4290.

Don't price yourself out of the market. When you design proper lubrication into your equipment, specify GITS Lubricating Devices—the widest selection available anywhere. The items pictured above are only a few of our many thousands of lubricating devices. At the design stage, get the GITS story. Free Engineering Service. Send NOW for your free Catalog.

GITS BROS. MFG. CO.

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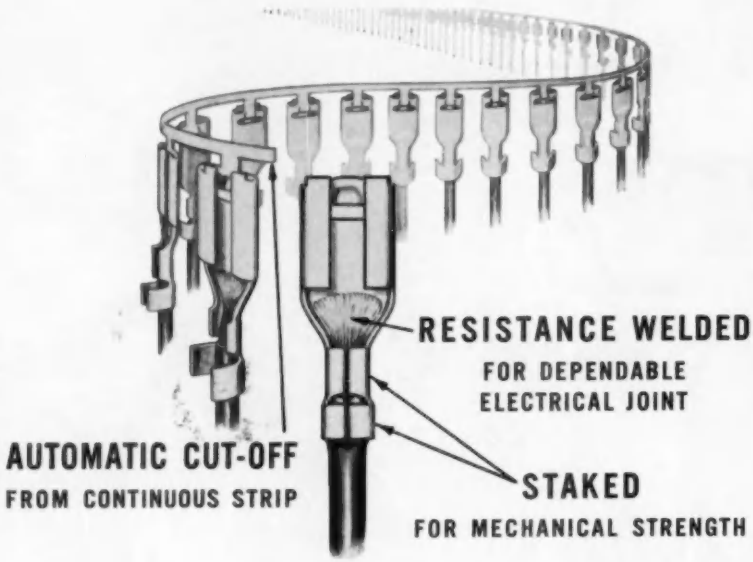
Chicago 23, Illinois

Clip this page for handy "rough reference"

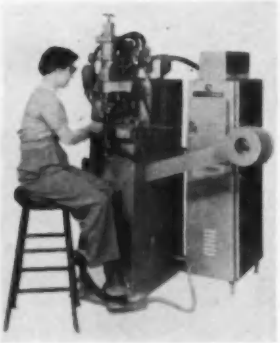


QUALITY ELECTRICAL TERMINALS

- - - - - - - - - 3500 PER HOUR

A Taylor-Winfield resistance welder combines 3 rapid operations to mass-produce terminals having positive electrical connection and enduring mechanical strength. These terminals are installed as original equipment in low voltage electrical circuits, such as automobiles, aircraft and communication systems.

The welder automatically indexes each terminal through welding, staking and cut-off stations at a rate of 3500 per hour. The resistance weld insures a strong, low-resistance electrical bond. Mechanical staking clamps the wire and insulation firmly to the terminal, absorbing any service strains.



The operator inserts a lead wire into the loading slot and steps on a pedal switch, performing all three operations simultaneously. The terminals are automatically fed into the welder in strip form as the cut-off shear separates each completed terminal.

If your unit assembly cost is high, take advantage of Taylor-Winfield's experience in welding techniques and machine design. Contact the nearest Taylor-Winfield sales office, listed below.

SEE OUR BOOTH 400
5TH AWS SPRING SHOW
April 9-11, '57
CONVENTION HALL
PHILADELPHIA, PA.

The TAYLOR-WINFIELD Corporation
WARREN, OHIO

ELECTRIC RESISTANCE AND ARC WELDING MACHINES

Sales and Service

CHARLOTTE • CHATTANOOGA • CHICAGO • CLEVELAND • DALLAS
DAYTON • DENVER • DETROIT • LOS ANGELES • PHILADELPHIA
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OAKVILLE AND WINDSOR, ONTARIO

tiss-Wright license to build aero engines.

Bayrische Motoren Werke AG, manufacturer of BMW cars, is expected to receive Lycoming's O435 aircraft engine license. It is said to have enough orders on hand to keep a big plant, now scheduled for reconstruction, busy for the next three years. The company will probably also undertake jet engine maintenance projects for the German Air Force.

The firm of Junkers, pioneer aircraft and engine builder, has been reorganized in West Germany, and is said to be developing new typs of compression-ignition engines. Henschel Flugmotorenba GmbH, Kassel, also is active again. It has a contract with Sikorsky, and maintains repair facilities for the U. S. helicopters. It may ultimately build these under license.

Civil Aviation Booms

In meeting its civil aviation needs, Germany is still relying primarily upon foreign suppliers. Lufthansa German Airlines are now equipped with Super-G Constellations and Convairs to the extent of being able to maintain both a domestic and international service. The South American route, which the line pioneered with mail flights in 1934, using catapult-equipped ships halfway along the route, was resumed last August, with stops in Paris, Dakar, Rio de Janeiro, Sao Paolo and Buenos Aires. Lufthansas Far East service, now operated from Germany via Istanbul, Beirut, Baghdad and Teheran, will be extended to India, Bangkok and Hong Kong, and Japan shortly; and, ultimately, to Australia, too. In preparation is a route to South Africa. The North American service is operated direct to New York and via Paris; also to Chicago via Montreal and Manchester, England. A transpolar route will be added next year, probably terminating in Los Angeles.

To its domestic routes Lufthansa has now added daily flights to Nurnberg and Hanover, and is planning stops for Bremen soon. It will then serve all civil airports in Germany, as well as most principal European cities.

Because of increased traffic and the projected expansion of routes, Lufthansa has four of the newest Super-Constellations, the 1649, on order, plus nine Viscount turboprop 810Ds for delivery in 1958, and four B-707/320 Intercontinental jet airliners, due in 1960. The 130-passenger Boeing-built jets will cover the New York-Hamburg route in less than seven hours, and the Duesseldorf-Montreal flight in just over six hours. While

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most of the Boeings will be powered with Pratt & Whitney JT 4A-3 turbines, Lufthansa's will be powered by British-built Rolls-Royce Conway jet engines. R-R engines will also power Lufthansas Viscounts, and thus simplify the maintenance problem.

In addition to Lufthansa, small local airlines for charter and freight service are gaining a foothold. One company is now in the market for 50 used DC-3 transport planes. The value of company planes is also being recognized. Krupp recently took delivery of an American-made Lear, a company plane seating 12. Indicative of the public interest in flying are an increasing number of advertisements in German newspapers, in which pilot instruction is offered to businessmen and private enthusiasts.

In August, 1956, 13 months after Germany was again given air sovereignity, there were 250 planes registered in Germany. Seventeen belong to Lufthansa, 170 are maintained by flying clubs, and 35 are privately owned. Many of the smaller planes are American-made Pipers (52), Cessnas, etc.

Lubrication Meeting

(*Continued from page* 312)

efficiency of the filter by adequate change practice, and that the oil man furnishes easily filterable oils.

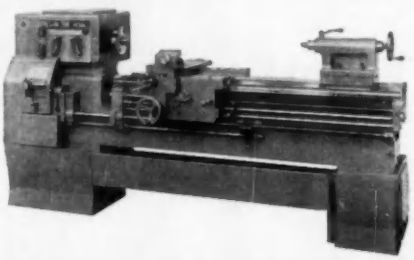
Richard B. Teiper, service manager, Chrysler Division, looks at the lube problem from the standpoint of convenience to the customer. He feels that the need for chassis lubrication should be reduced as much as possible and suggests the following ways it can be done: by the adoption of automatic lubrication systems, such as several makes (not Chrysler) now offer; availability of longer-lived lubricants; and redesign of car components to provide as many permanent lubrication points as possible. In this connection he outlined the several changes in design made by Chrysler in 1957 models, noting that Chrysler had 23 fittings in 1956 but only eight in 1957. Among such design changes, Teiper mentioned the use of rubber bushings; the adoption of nylon bushings for inaccessible points; and the possibilities inherent in air suspensions.

On wheel bearings Chrysler recommends 10,000-mile or once a year lubrication for front bearings; and no change period at all for rear wheel bearings. For manual steering gears Chrysler recommends multi-purpose SAE 90 for summer and for winter

LeBlond Sliding Bed Gap Lathes

The most versatile lathes in the world

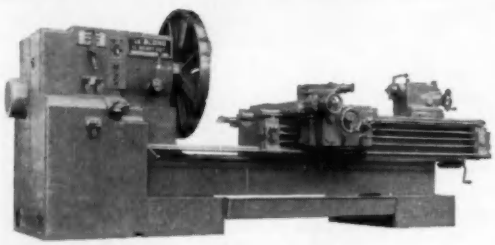
17"/28" *Regal*



For turning a variety of parts—particularly the unpredictable extremes you encounter in maintenance and job shop work, LeBlond Sliding Bed Gap Lathes are unsurpassed. At left is the 17"/28" Regal, smallest of the four LeBlond Sliding Bed Gap Lathes.

Major features, 17"/28" Regal: Hardened and ground replaceable steel bed ways. Combination gear-belt drive headstock. 12 spindle speeds, 48 feeds and threads. Both feed rod and leadscrew. 3 bearing spindle. *Write for Bulletin RG-210-A.*

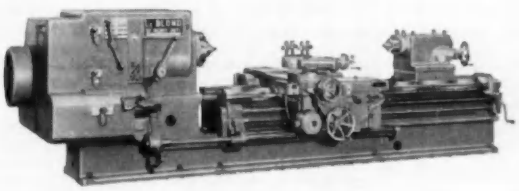
16"/38" *Heavy Duty*



With bed closed, LeBlond Sliding Bed Gap Lathes function as regular engine lathes. The special bed slides open to form a gap that will accept odd-shaped parts and large diameter work. This also provides greater bed length, more than 50% greater distance between centers.

Major features, 16"/38" Heavy Duty: Combination gear-belt drive provides a complete speed range from 16 to 2000 rpm. 4-way power rapid traverse. New spindle mounting for safe high speeds. Hardened and ground bed ways. *Write for Bulletin SBG-104-A.*

25"/50" and 32"/60" *Heavy Duties*



Seventy years of LeBlond experience in solving day-by-day turning problems, extensive laboratory research and practical ideas from our own shop combine to give Sliding Bed Gap Lathes features to meet your turning requirements for years to come.

Major features, 25"/50" and 32"/60" Heavy Duties: 36 speeds at high power. 4-way power rapid traverse. Automatic lubrication in the headstock, quick change box and apron. Hardened and ground bed ways. Anti-friction bearings throughout. *Write for Bulletin SBG-106-N.*

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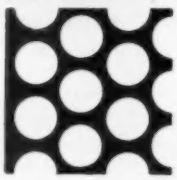

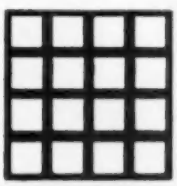

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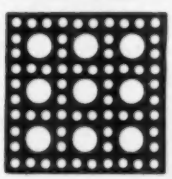

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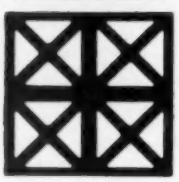

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above minus 10 F; SAE 80 for temperatures below minus 10 F; SAE 75 for minus 30 F and below.

Chrysler recommends Type A fluids for power steering but insists upon additional improvement in these fluids along the following lines: greater shear stability; greater heat stability; and greater compatibility with gear materials, particularly with seals.

Teiper made a strong plea for recognition by the entire industry and the public that the only acceptable brake fluids from the standpoint of highway safety are the high boiling point SAE heavy duty materials. No other kinds should be tolerated.

Improved rear axle lubes are a must according to E. J. Krause, Buick service manager. He described work with a special test procedure indicating that axle requirements must be met by lubricants available on a graduated scale from 5 to 15, depending upon the amount of a special additive used in this test. Buick's new axle has a performance requirement of 12 on a green gear set, 10 on a broken-in gear set. Former Buick axles required 15 on a green set and 14 or 14 plus for a broken-in set.

This new type of rear axle lube, when it is available, must meet performance requirements if it is to be acceptable to the motor car producer. Meanwhile, Buick will continue its practice of supplying its own packaged lube for initial fill whenever a new axle is installed in the field.

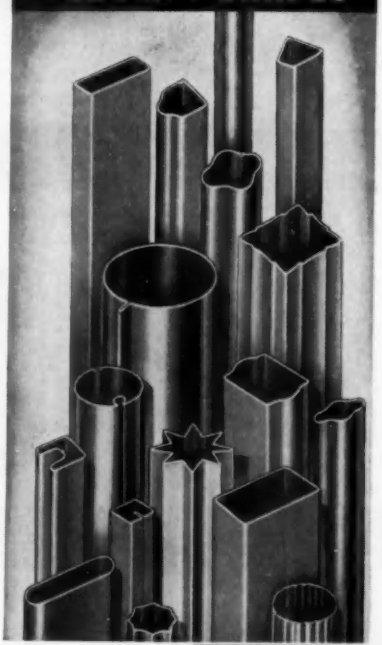
Coming to Type A fluid, Krause sees a demand for improvement to meet the requirements of modern automatic transmissions, pointing out that the present fluid was designed for cars having less than half the horsepower of present cars and only about 2/3 of the torque.

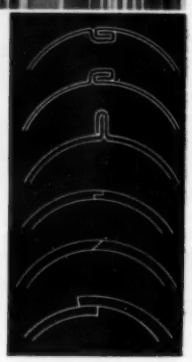
Krause noted that Type A fluid deteriorates quite rapidly. Some time ago manufacturers were recommending drain intervals of 25,000 miles. Late in 1956 Cadillac reduced the drain interval to 12,000 miles. It appears that the material can fail at less than 25,000 miles and sometimes below 12,000 miles if the transmission is overheated by severe use. Despite this and for various other reasons, Buick still is continuing with the 25,000-mile change recommendation.

A scholarly paper on engine deposits was presented by J. G. Moxey, Jr., of Sun Oil Company. He took up the question of engine deposits, where they form and what harm they do, and what has been done about it. Examples then were shown of typical cases. What has been done about it? That is the story of engine lube improvement during the last 20 years,

(*Turn to page 429, please*)

COLD ROLL FORMING TUBULAR SHAPES





Among the wide variety of things you can make on a Yoder Cold Roll Forming machine are round, square, oval, rectangular and other tubular shapes, such as illustrated. The seams may be open, lapped, butted, dovetailed, interlocking, etc.—as shown in the drawing.

Millions of feet of such unwelded tubular shapes are made from coiled strip for conductor pipe, bedsteads, lamp stands, window channel, wiring raceways, carrying rods, etc. Production ranges from 20,000 to 50,000 feet per day, with only one operator and a helper.

Yoder offers you the cooperation of their engineering staff for designing and adapting their cold roll forming machines, auxiliaries, and tooling, for the low cost production of structurals, mouldings and trim, panels, tubular and other shapes, to meet individual needs.

The Yoder Book on Cold Roll Forming is a complete, illustrated text on the art and the equipment needed for performing a variety of operations which can be combined with cold roll forming, at little or no extra labor cost. A copy is yours for the asking.

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YODER ENGINEERING

COLD-ROLL FORMING MACHINES

Farm implement dealers cooperated with the Watonwan County, Minn., Safety Council, to stress the dangers of unguarded power take-off shafts in this county fair exhibit. "Empty chairs" mean "empty tractor seats" too!

Photo courtesy of
Watonwan County Safety Council

BLOOD BROTHERS *Integral*

Safety-Shielded Drive Lines help farm implement dealers keep their customers safe!

For humanitarian reasons—and wise business practice as well—it pays to increase the customer's safety in every possible way. As proof of great progress in the farm implement field, Blood Brothers reports an increase of over 300% in the demand for Integral Safety-Shielded Drive Lines during the past year alone!

Some manufacturers are supplying Integral-Shielded Drives exclusively on *all* power take-off implements they build. This trend to greater safety helps implement builders—dealers—users—everyone!

Saleswise, Blood Brothers Integral-Shielded Drive Lines are helpful too. They offer a strong "plus" selling feature that *proves* you place the farmer's best interests *foremost.* Designed to avoid careless or absent-minded removal, they'll be *in place* to protect implement operators at all times.

If you *build* implements, write for information on the sizes you need.

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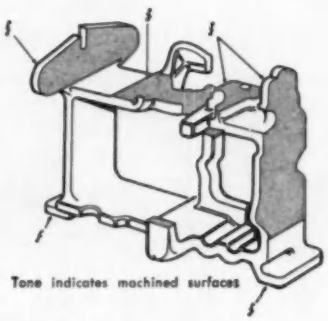
One of the nation's leading manufacturers of communications equipment needed a way to increase production milling of telephone relay frames, reduce unit costs and greatly improve product quality. They called on Kearney & Trecker to solve this problem.



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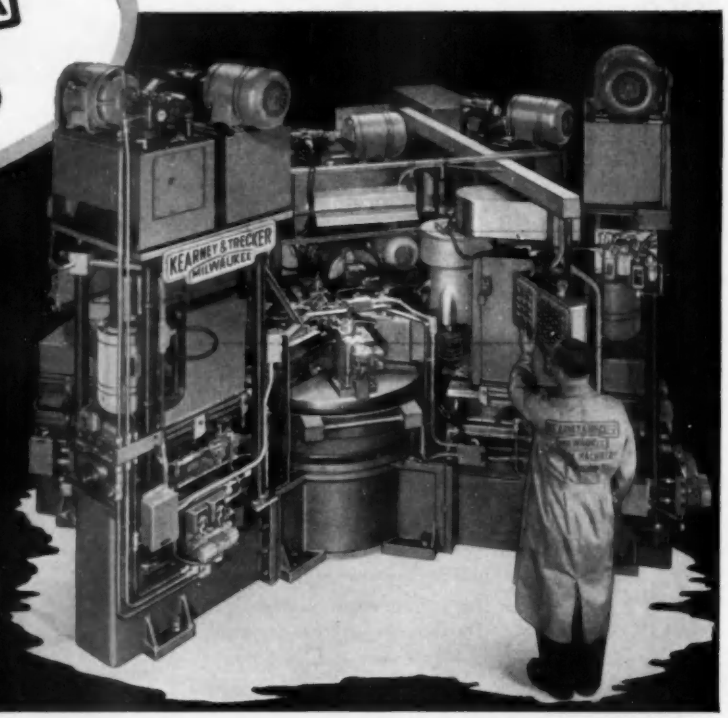
Here's Kearney & Trecker's answer: Two 6-Station Rotary Indexing machines which mill 24 surfaces on cast iron telephone relay frames within plus or minus .002" at a combined rate of 360 pieces per hour. Former methods produced only 150 relay frames per hour.

An important cost-saving feature of each machine is the application of standard units — five feed slides and a 48" rotary index table. Such utilization of standard units lowered initial costs, simplified maintenance and increased efficiency.



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Kearney & Trecker automatic production machines accurately perform many operations at lower cost. But most important to you, this is accomplished by combining standard design components — feed slides, way-type drill units, tapping units, quill feed units, rotary index tables — that keep initial machine costs at a minimum. You get the production you want and the economies you need from job-proven designs. What's more, you get performance to exacting accuracies.

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For more information on machine illustrated, ask for Data Sheet No. 1083. A new bulletin, SMD-56, which describes many of our outstanding machine designs, is also yours for the asking.

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Lubrication Meeting

(*Continued from page* 426)

together with the special efforts by the oil industry to meet the problem of hydraulic valve lifters when they came into general use a few years ago.

One of the latest advances, made in 1955, was the trend to improved low-temperature detergency. Even more recently it has been recognized that the important mechanism in preventing sludge formation is one of inhibiting the formation of insoluble sludge particles rather than dispersing them after they are formed. Moxey concludes that despite the high level of engine cleanliness today, there is no question that further progress should be even more spectacular.

That wear can be reduced through proper chassis and gear lubrication was the message brought by J. B. Stucker, Pure Oil Co. Describing the progress of research on chassis lubes and greases, he commented on the extensive test work being done in conjunction with the Ordnance Department. In its final stages of completion, it will translate field performance into the language of controlled axle dynamometer testing. Oils resulting from this test work have been tagged "Super-Mil" in the absence of an official designation.

Field tests carried out at the Yuma Test Depot have shown a vast improvement in gear life in trucks under full load at high speeds, including 22 per cent grades in Death Valley. Proving ground tests on passenger cars, involving shock testing at high speeds, have indicated that the same oils will handle the scoring problem as well as, if not better than, the former so-called "active" lubes. At the moment these new lubes appear to be really multi-purpose in every respect.

Perhaps the biggest hassle occurred in the discussion of motor oils and oil changes. This was posed by V. A. Gates, Shell Oil Co., in describing an enormous test project that involved data from some 17,000 car owners. In this connection he summarized the factory recommendations, showing a range of 300 miles up to as high as 2000-3000 miles for the first drain. He also showed a weighted calculation of the so-called "average" drain period as being estimated at 2444 miles for all cars.

Meanwhile the oil industry has been recommending the following drain periods: city and suburban driving, 1000 miles; dusty or cold weather driving, 500 miles; highway driving,

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2000 miles. The 1000-mile interval is estimated to apply to about 2/3 the cars on the road.

Out of the 17,000 cases, Shell actually tested 1093 oil drain samples by a special technique. An analysis of the data indicates that although oil changes are being made less frequently than the public believes, the average oil change is around 1843 miles, indicating greater frequency than recommended by the manufacturers.

In summary, the Shell personal survey indicates the following findings: that crankcase oil is being changed on the average of 1843 miles; that on the basis of condemnation of used oil, 54.6 per cent of all cars driven into a service station need an oil change; approximately 72 per cent of motorists change oil by 2000 miles.

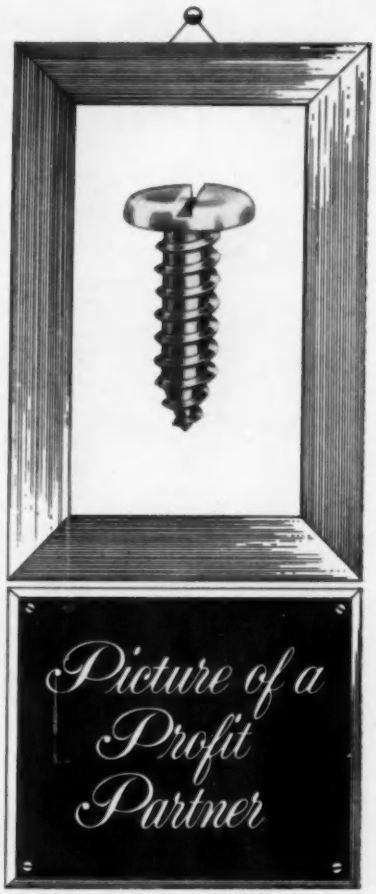
About 4.8 per cent of motorists said they used proprietary motor oil additives and it is of interest that the majority of those are people who buy the highest priced oils. As to the grade and price of oil, 28 per cent said they used multi-grade; 58 per cent said they used the 2nd grade; six per cent said they use the third grade, the lowest priced.

Doman too commented in his paper on the variations in oil drain practice as specified by the manufacturers. He found no definite pattern relating either to drain intervals or the servicing of oil filters.

Statements from other oil experts gave various figures for drain intervals from their own surveys. The survey results differ somewhat but each one held out for 1000 miles as a minimum. One study showed that 78 per cent of cars tested needed an oil change due to contamination; a group of 55 per cent needed an oil change at less than 1000 miles due to severity of contamination.

Still another contributor said a survey indicated that average oil change was around 1788 miles. And 74 per cent of the cars they tested had oil unsuitable for further use at 1500 miles.

The whole thing is rather confusing at the moment. Motor car producers and the oil industry occupy two different camps: manufacturers want to reduce frequency of oil changes and service station stops; the oil industry wants people to buy more oil and chassis lube jobs. The oil industry now offers proof that engine lubes deteriorate more rapidly than the manufacturers' oil change recommendations. As the sense of the meeting indicated, further cooperative effort is required at high levels to map a policy that meets with general approval and is best for the consuming public.



Quality Fasteners by Southern

Save you time—
start fast, hold tight

Lower rejects—
do not mar or damage

Boost safety—
no injuries from
obstinate performance

Why not take advantage of Southern bolts and screws, precision built of finest metal, for faster production, greater economy and safety?

WOOD SCREWS • STOVE BOLTS • MACHINE SCREWS & NUTS • A&B TAPPING SCREWS DOWEL SCREWS • HANGER BOLTS • ROLL THREAD CARRIAGE BOLTS • STOVE BOLTS

For free samples and Stock List write Box 1360-AI, Statesville, North Carolina.

Southern SCREW COMPANY
STATESVILLE • NORTH CAROLINA

Warehouses: **NEW YORK • CHICAGO DALLAS • LOS ANGELES**

TODAY'S FASTEST EXPANDING FIELDS REQUIRE MORE AND MORE FORGINGS...

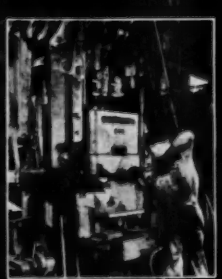
FOR INSTANCE—

One of the four Chambersburg Steam Drop Hammers at TRANSUE AND WILLIAMS STEEL FORGING CORP., ALLIANCE, OHIO. *(Above) Some of the* TRANSUE AND WILLIAMS *forgings produced on these hammers.*

CHAMBERSBURG STEAM DROP HAMMERS

BUILT TO HANDLE MODERN FORGING REQUIREMENTS—*WITH HIGHER PRODUCTION—LOWER COSTS*

Cost per piece produced is the only true test of a hammer's worth and the only true basis for appraising its various features. Every feature of the Chambersburg Steam Drop Hammer is designed and built with but one objective—to produce forgings at the lowest cost per piece, whether that cost be on a basis of the piece in its forged or in its machined state. Write for Bulletin No. 55-L-4.



A rugged—low maintenance teammate is the practically indestructible Chambersburg Steel Side Trimming Press.

CHAMBERSBURG ENGINEERING COMPANY · CHAMBERSBURG, PA.

It's only part of the National Castings story...

a multiple source within one company

Castings in—
malleable
HTM Metal
(pearlitic malleable)
carbon steel
alloy steel
*manganese steel**
*gray iron**

**Only from*
Capitol Foundry Division
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• Most companies—probably yours—pursue a "multiple source" policy to keep production lines humming. And with National you can continue this policy with several "plus" advantages.

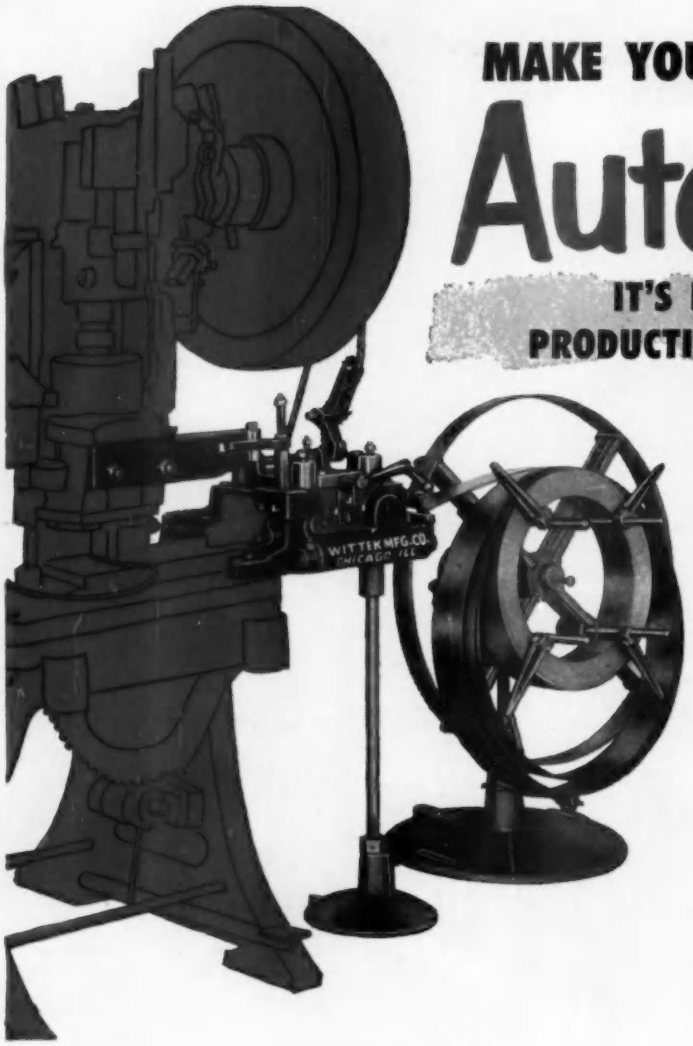
• Individual jobs can be made interchangeable between plants . . . or equipment can be interchanged between plants. This way you get all the advantages of dealing with *one* strong company . . . with unparalleled facilities of *many* plants. Remember it's just part of the National story—flexibility of production with individual attention. AA-4887

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

Established 1868 • Cleveland 6, Ohio

MAKE YOUR PUNCH PRESSES Automatic

IT'S EASY WITH WITTEK PRODUCTION FEEDING EQUIPMENT



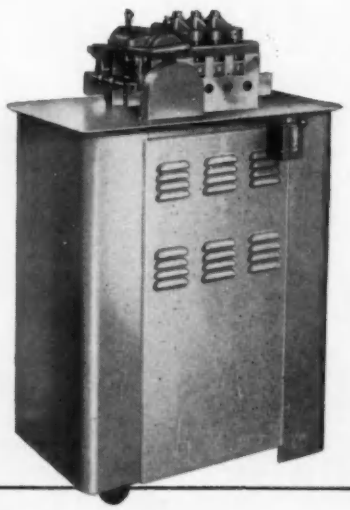
Roll Feeds and Reel Stands

Wittek automatic roll feeds assure an accurate feed (push or pull) of coiled material to any size or make of punch press. Standard units are available in a wide variety of models to fit all requirements. Simple adjustments permit quick change from one job to another.

Several sizes of Wittek reel stands accommodate a range of coil weights up to 800 pounds—with widths up to 12 inches. They facilitate the handling of coiled strip or wire for automatic feeding. Each reel can be adjusted to any angle and height.

Power-Driven Stock Straighteners

The Wittek stock straightener is a self-contained motor-driven unit for continuous straightening of coiled stock. It is used in conjunction with a reel stand and automatic feed for punch presses. An infinitely variable speed drive permits any desired straightening speed. The maximum width of stock handled on standard models is 12 inches.



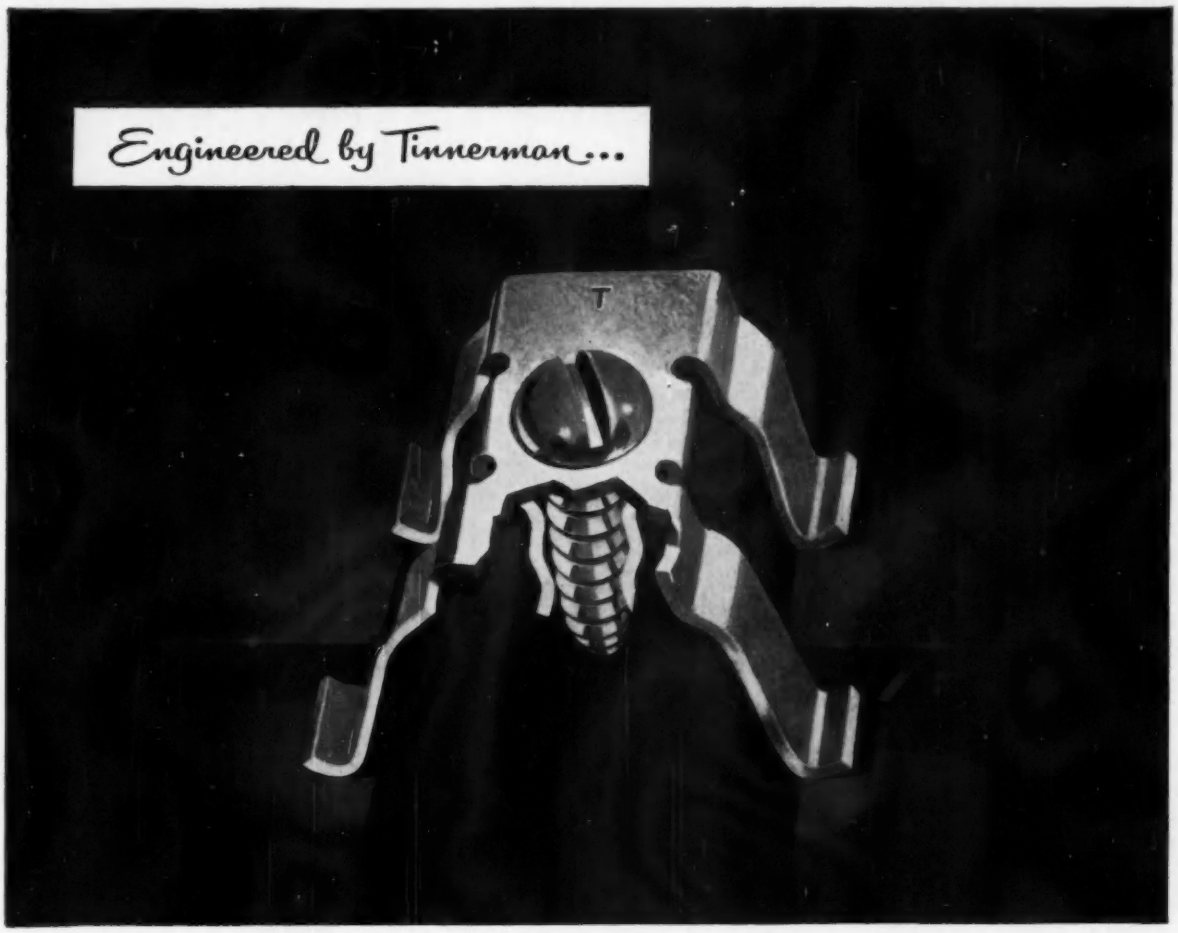
Write for recommendations on Roll Feeds, Reel Stands, and Stock Straighteners to meet your requirements.

Production Feeding Equipment

WITTEK MANUFACTURING COMPANY

4319 West 24th Place • Chicago 23, Illinois

1554



6-fingered **SPEED CLIP**®
holds glass panels tight, saves 46%!

This special SPEED CLIP fastens glass panels to aluminum extrusions with a grip that prevents slippage. Heat stays in, rain stays out of greenhouses and similar glass structures. Working closely with engineers of the Metropolitan Greenhouse Mfg. Corp., Brooklyn, Tinnerman developed this unique fastener that saves almost one-half the cost of former less effective assembly methods!

Installation is fast and simple. Two overlapping glass panels are positioned against the extrusion. A screw driven into the spring-steel SPEED CLIP spreads the two center fingers outward to grip the inner walls of the extrusion. No secondary fastening devices required—SPEED CLIPS hold tight, yet are easily removed to permit replacement of glass.

This is another example of a fastener engineered by Tinnerman to satisfy special, complicated fastening problems. A Fastening Analysis of your products may produce a similar cost-cutting solution. See your Tinnerman representative soon.

TINNERMAN PRODUCTS, INC.
BOX 6688 • DEPT. 12 • CLEVELAND 1, OHIO

TINNERMAN

Speed Nuts®

FASTEST THING IN FASTENINGS®

Canada: Dominion Fasteners, Limited, Hamilton, Ontario. Great Britain: Simmonds Aerocessories, Limited, Treforest, Wales. France: Simmonds, S. A., 3 rue Salomon de Rothschild, Suresnes (Seine). Germany: Hans Sickinger GmbH "MECANO", Lampe-t-Lippe.

Readily Available Westinghouse Fans

Meet your Fume and Dust Removal Requirements

Whatever your air handling problem . . . smoke, fumes, vapor, dust, wood shavings, granular material or ventilating . . . these Westinghouse fans are designed to handle or remove them . . . efficiently and economically.

INDUSTRIAL FANS (Steel Casing) . . . high efficiency for general Air Handling; fume and dust removal; 11 sizes, each with 3 types of wheel for specific applications. Wheel diameters 19″ to 64″; inlet diameters 11″ to 37″.

INDUSTRIAL FANS (Cast Iron Casing) . . . ruggedly built, corrosion resisting. For low volume fume or dust removal, materials conveying, industrial drying and cooling. In 10 sizes, each with 3 types of wheel for specific applications. Wheel diameters 8″ to 34″; inlet diameters 4½″ to 18″.

VENTILATING SETS (Direct-Connected) . . . compact, efficient, ready-to-run. Especially suited for small ventilating installations. Cleanable radial blade wheel minimizes problem of handling airborne dirt and grease. Six sizes. Wheel diameters 6″ to 15″; inlet diameters 6″ to 14″.

VENTILATING SETS (V-belt driven) . . . self-contained. Install indoors or outdoors in a wide variety of heating, ventilating or air conditioning applications. Twelve sizes. Wheel diameters 9″ to 30″; inlet diameters 10″ to 32⅞″.

These leading industrial distributors stock Westinghouse Ventilating Sets and Industrial Fans

FORSLUND PUMP AND MACHINERY CORP.
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CAREY MACHINERY & SUPPLY CO.
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Phone: Broadway 6-1600

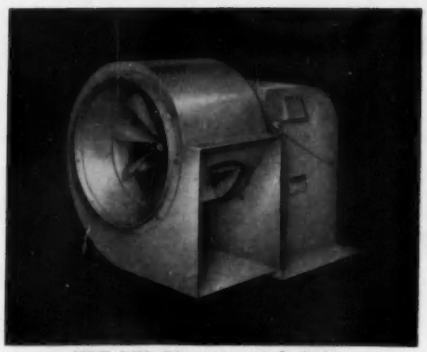
MILL & INDUSTRIAL SUPPLY
Louisville, Kentucky
Phone: Clay 3643

If there isn't one near you, call your Sturtevant Sales Engineer, or write Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Mass.

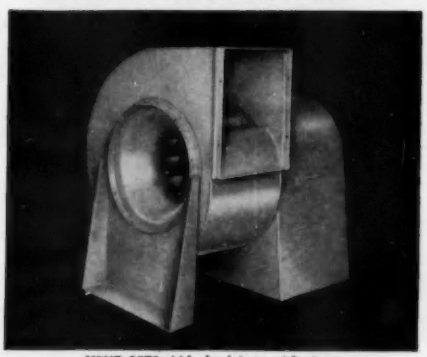
WESTINGHOUSE AIR HANDLING

J-80619

YOU CAN BE SURE...IF IT'S Westinghouse



VENT SETS: Direct-connected, 6 sizes

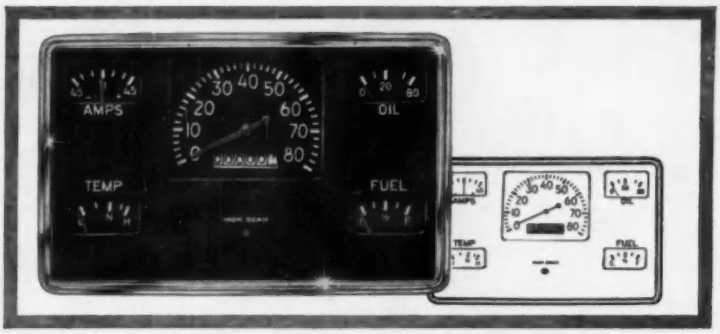


VENT SETS: V-belt driven, 12 sizes

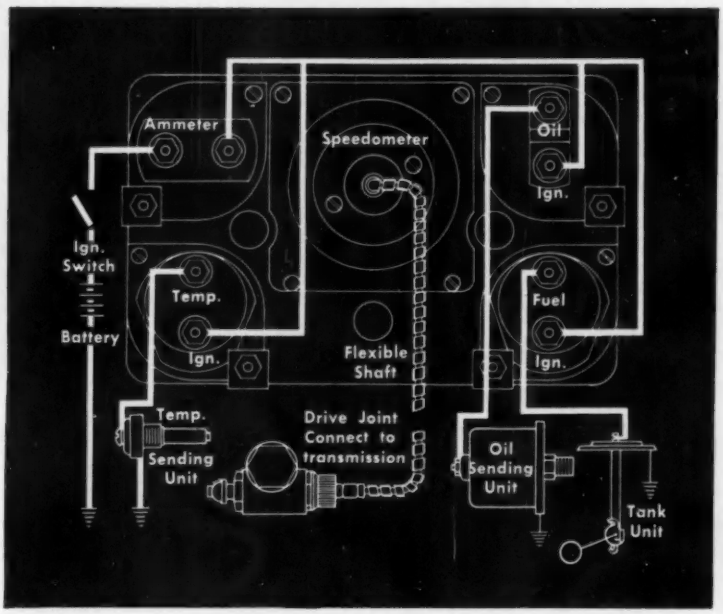
INDUSTRIAL FANS: Cast iron casing, 10 sizes

INDUSTRIAL FANS: High-efficiency steel casing, 11 sizes

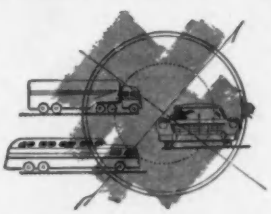
How STEWART-WARNER can help you plan a complete INSTRUMENT PANEL



Stewart-Warner Panel 602-H. A stock panel now used by leading truck manufacturers. Highly flexible—can be fully electric or combination of electric and mechanical.



Typical Hook-up for Panel 602-H. Above panel includes mechanical speedometer, electric gauges, complete with sending units.



...from designs to finished panels ...custom-made or stock models —for cars, trucks, buses and engines!

At every step of design—from styling of panel to choosing drive equipment—Stewart-Warner offers you the widest selection . . . plus engineering teamwork unmatched by any other manufacturer!

Stewart-Warner furnishes the most complete line of individual instruments—speedometers, tachometers, tachourmeters—and gauges of all types. Our engineers will help you combine these in one of our many standard panels . . . or an entire panel can be custom-made to your specifications.

Stewart-Warner—instrument specialists for over half a century—can supply all your instrument needs and drive equipment *from one dependable manufacturing source.* Save money by consulting Stewart-Warner now. . .while your designs are still in the early planning stage and are subject to modification!

For further information, write:

STEWART-WARNER

Dept. MM-37, Original Equipment Sales
1826 Diversey Parkway • Chicago 14, Illinois

Stronger! Lighter!

ALWAYS SPECIFY GUNITE CAST-STEEL WHEELS

FOR NEW EQUIPMENT

FOR CHANGEOVERS

Many leading fleet engineers specify Gunite Cast-Steel Wheels on all their heavy trucks and trailers . . . for good reason too! Gunite wheels are rugged . . . yet lightweight. Minimum unsprung weight increases payload . . . increases income. Compare weight with other wheels. Save with Gunite! Gunite wheels fit both tubeless and conventional tires.

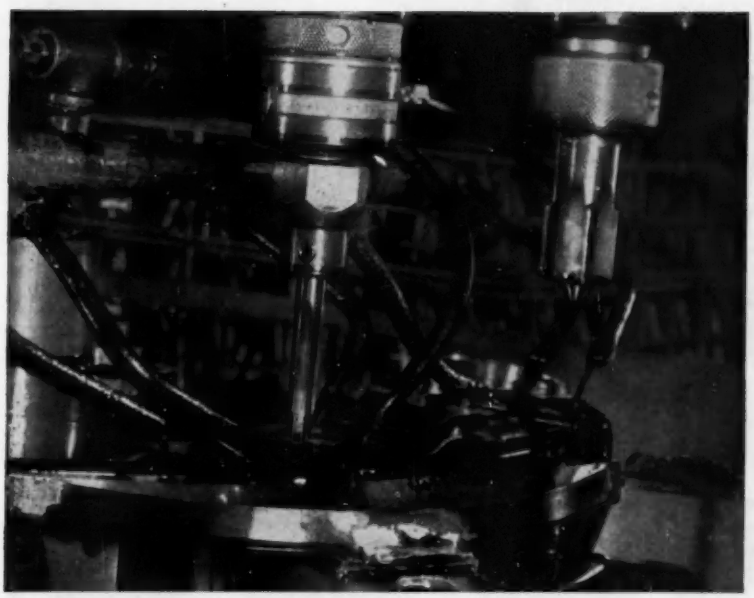
Call Your Gunite Distributor or Write for Complete Information

GUNITE BRAKE DRUMS for Trucks, Trailers and Buses

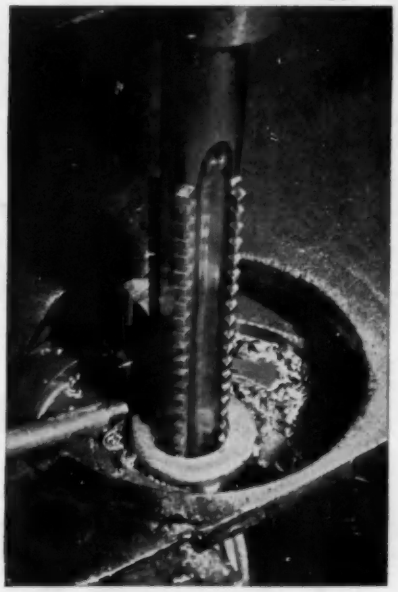
Gunite Drums offer you more miles of safe, sure stops. Ribbed design minimizes flexing, dissipates heat faster and resists checking. Write for information or see your Gunite Distributor.

GUNITE FOUNDRIES CORPORATION *Established 1854* **ROCKFORD, ILLINOIS**

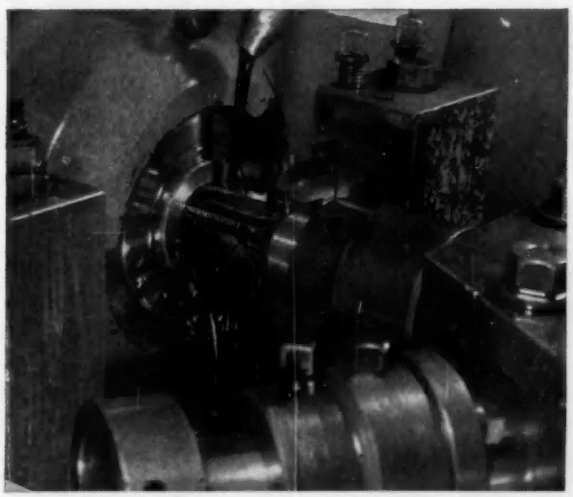
Cutting Tool and Gaging Methods . . . by BESLY



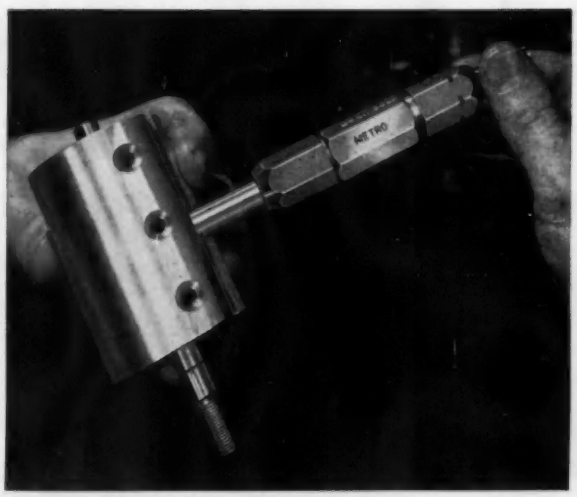
MATCHED TO THE JOB — At The Chicago Screw Company, Bellwood, Illinois, two sizes of Besly taps, poised above an indexing table, are ready to tap C-1141 steel parts. Operating alternately, the smaller 3/8"-24 Besly tap quickly threads a hole, then the work indexes beneath the 1 3/32"-24 Besly tap and a larger hole is threaded. By using Besly's Engineering Service, this company realized lower costs and a better job. The right taps were carefully selected and matched to the specific threading requirements.



SQUARED OFF — Templeton, Kenly & Company, Broadview, Ill. cuts heavy, almost square threads in malleable iron bases of rugged 12 to 24-ton screw jacks with Besly acme thread form Taps. Notice mirror finish on flutes promoting greater chip clearance.



TOUGH GOING — Here you see a C-1018 high carbon steel nut being threaded by a Besly 1¾" tap. Extremely abrasive, because it has been carburized and heat treated, the material is difficult to tap. However, Besly taps tested on the work, proved they could "take it" and were specified by this manufacturer for the job.



ASSURED ACCURACY — To assure that holes in planer cutter head assemblies provide precise fits for set screws, SKIL Corporation, Chicago, checks for accuracy with Besly-Metro Double End Reversible Cylindrical Plug Gages. Two opposed blades have three holding set-screws and another for adjusting position.

Prove to yourself that Besly Cutting Tools and Gages produce better results. Put them on trial on your toughest jobs, and check the difference in longer tool life, less down time, fewer rejects and faster production. If you'd like to try Besly tools or use Besly's Engineering Service, see your Besly distributor for details, or write us . . .

Engineering, Service and "Specials" . . . are a Besly Specialty

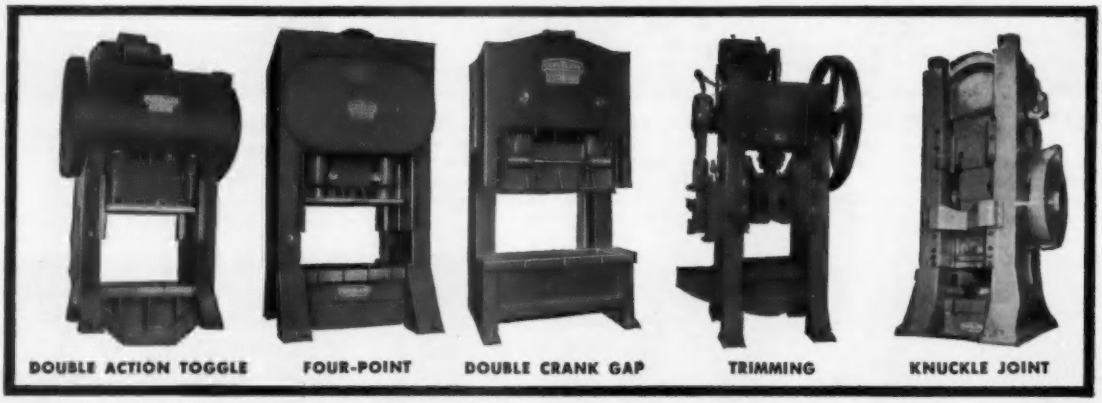
BESLY

BESLY-WELLES
CORPORATION
Est. as C. H. Besly & Co. 1875
132 Dearborn Avenue
South Beloit, Illinois

TAPS • DRILLS • REAMERS • END MILLS • TOOL BITS • GAGES
CARBIDE TIPPED TOOLS, BLANKS, THROWAWAY INSERTS and HOLDERS

Cleveland Presses

help keep your plant competitive



If you do volume stamping, production-wise and cost-wise there's no better way to protect your competitive position than by prompt replacement of outmoded presses.

High stamping and maintenance costs are the penalty of inefficient press operation. Don't let them rob you of the cost of new, efficient presses.

Now's a good time to check your older press performance records. You may find that you're already paying for new presses . . . *without their benefits*. If so, you can make no better investment than the purchase of *new* Cleveland Presses equipped with the Cleveland (patented) Drum Type Clutch. Our engineers will gladly help you select the *right* Cleveland for your needs. Write or call today!

The CLEVELAND Punch & Shear Works Co.
Power Presses • Fabricating Tools • Punching Tools and Dies
East 40th and St. Clair Avenue, Cleveland 14, Ohio
Offices at: New York • Chicago • Detroit • Philadelphia • East Lansing • Cincinnati

THE CLEVELAND PUNCH & SHEAR WORKS CO.
Established 1880

XX

This is the twentieth of a series of advertisements dealing with basic facts about alloy steels. Though much of the information is elementary, we believe it will be of interest to many in this field, including men of broad experience who may find it useful to review fundamentals from time to time.

Flame-Hardening Alloy Steels

When the surface of steel is subjected to direct application of flame and heated above the transformation range, then hardened by quenching, the process is known as flame-hardening. Its primary purpose is to surface-harden without affecting core properties. Jets of flame are played directly on the steel, and hardness penetration can be made to vary considerably. Usually in alloy steels this depth will range from 0.03 to 0.12 in., the actual figure depending upon the method of heating and quenching used.

Unlike carburizing, flame-hardening does not involve the absorption of extraneous elements by the steel. There is no alteration of the chemical composition. To put it simply, the steel must have its own self-hardening characteristics; cannot be dependent upon carbonaceous salt baths, gases, etc.

Flame-hardening is not a substitute for the conventional furnace method. Each has its uses. The particular virtue of flame-hardening is that the flames can be directed to localized areas. The furnace, on the other hand, is generally more economical and feasible when parts produced in large quantities must be hardened all over.

Any type of hardenable steel, alloy or carbon, can be flame-hardened, and there will usually be no scale or pitting. The alloy content is the governing factor when determining the quench. In some cases a rapid quench is required; in others, it can be as slow as air-cooling. Tempering presents no problems, for flame-hardened steel can be tempered as if hardened to the same point by other methods.

A list of typical flame-hardened parts would include such familiar items as gear and sprocket teeth, and certain types of cams and rollers, shoe treads, etc. This list is by no means exhaustive; it could include many other parts that often require a localized hardening treatment, especially for wear-resistance.

When seeking information about flame-hardening methods, please feel free to consult with our technical staff. Bethlehem metallurgists will gladly cooperate, and you can depend upon their suggestions. You can rely on Bethlehem, too, as a source of alloy steels, for Bethlehem makes the complete range of AISI standard grades, as well as special-analysis steels and all carbon grades.

If you would like reprints of this series of advertisements from No. I through No. XVI, please write to us, addressing your request to Publications Dept., Bethlehem Steel Company, Bethlehem, Pa. The first 16 subjects in the series are now available in a handy 32-page booklet, and we shall be glad to send you a free copy.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

The World's Leading Manufacturers of FUEL INJECTION EQUIPMENT *for Diesel Engines*

Depots and Service Agents in over 100 Countries

C.A.V.

C. A. V. FUEL INJECTION EQUIPMENT DIVISION

of

LUCAS ELECTRICAL SERVICES, INC.

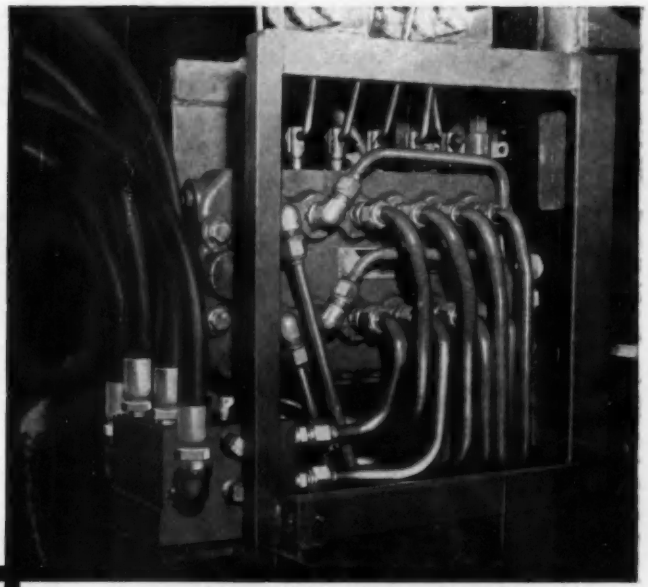
Head Office: 653 Tenth Avenue, New York 36, New York

Sales Offices: 14820 Detroit Avenue, Cleveland 7, Ohio **West Coast: 5025-29 W. Jefferson Blvd., Los Angeles 16, California**

Canadian Distributors:

Joseph Lucas (Canada) Ltd., Head Office: 11 Davies Avenue, Toronto 8, Ontario **Branch Office: 3401 St. Antoine Street, Montreal 30, Que.**

FULL PAYLOAD POWER



Close-up of Power Unit on Sherman Power Digger showing direct power delivery from *lever to load*. Pilot model equipped with Eastman Hydraulic Hose and Tube Assemblies.

International Harvester Model 75 Payscraper. First application of hydraulic steering on earth movers. USER OF EASTMAN EQUIPMENT.

Allis-Chalmers Model 100 ALL CROP Harvester. Steering brakes and header height hydraulically operated. USER OF EASTMAN EQUIPMENT.

Bucyrus-Erie Model H-5 Hydrocrane. Hydraulically controlled boom, out riggers and bucket. USER OF EASTMAN EQUIPMENT.

FOR FULL PAYLOAD POWER FROM LEVER TO LOAD specify

Eastman

HYDRAULIC HOSE ASSEMBLIES

For full payload power—*from lever to load*—consistent with long-lasting service, safety and sound construction—always specify Eastman Hydraulic Hose Assemblies.

Eastman, *first in the field* of Hydraulic Hose Assemblies, developed many original engineering advantages in design, construction and assembly—time tested by *unequalled* years of experience.

Since Eastman pioneered in the very first applications of mobile hydraulic power . . . you will find Eastman Hydraulic Hose Assemblies used by many original equipment manufacturers who were pioneers in their respective fields also.

Let *their endorsement be your assurance* of the satisfactory hydraulic performance of your products, too—plus the prestige and competitive sales advantage that comes with quality Eastman Hydraulic Hose and Tube Assemblies—*the Standard of the Industry!*

It pays to write Eastman ***FIRST*** *... because Eastman was first in the field of Hydraulic Hose Assemblies*

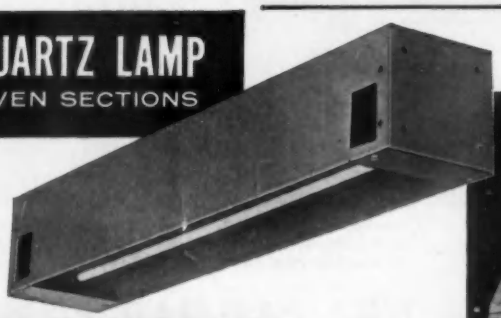
Eastman *first in the field*

MANUFACTURING COMPANY, Dept. AI-3, MANITOWOC, WIS.

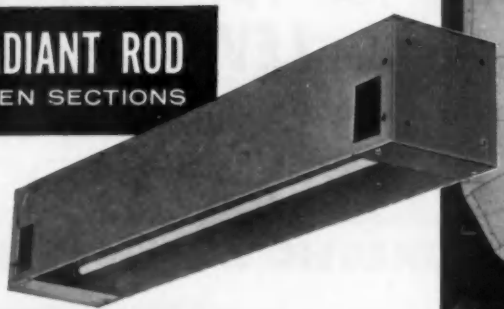
Check FOSTORIA'S Full Line of Radiant Heating Equipment...

Select Components or Complete Ovens from 3 SOURCES OF INFRARED ENERGY

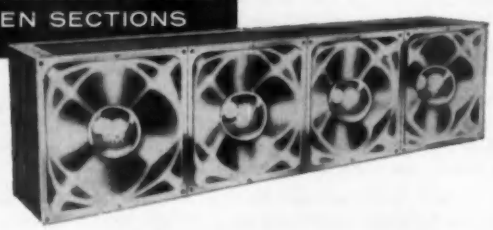
1 QUARTZ LAMP OVEN SECTIONS

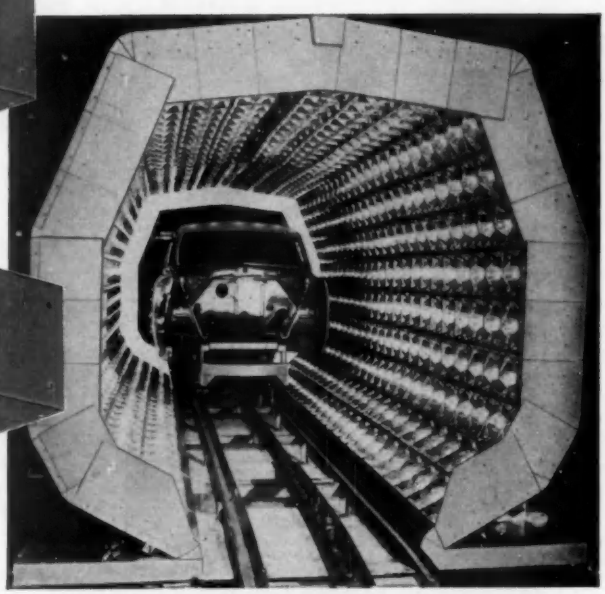


2 RADIANT ROD OVEN SECTIONS



3 INFRARED LAMP OVEN SECTIONS





Fostoria Complete Radiant Ovens

INFRA-RED fostoria SYSTEM

Whatever the industrial application for radiant heat, FOSTORIA can recommend and supply the *type* of equipment best suited for the job. The FOSTORIA line includes equipment incorporating *several sources:* **(1)** The new T-3 quartz lamp **(2)** Far infrared metal elements, and **(3)** G-30 and R-40 near infrared lamps.

Because Fostoria manufactures *a complete line* of sections, portable units and specially engineered ovens . . . *of all three types,* when you take your heating problem to Fostoria, you get an exclusive brand of heating "know-how," that is available *only* from Fostoria—the pioneer manufacturer of Radiant Heating Equipment. Get complete details on the FOSTORIA line today! See your nearby Fostoria Sales Engineer right away, or write direct.

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Pioneer Manufacturer of Radiant Equipment...Components to Complete Ovens

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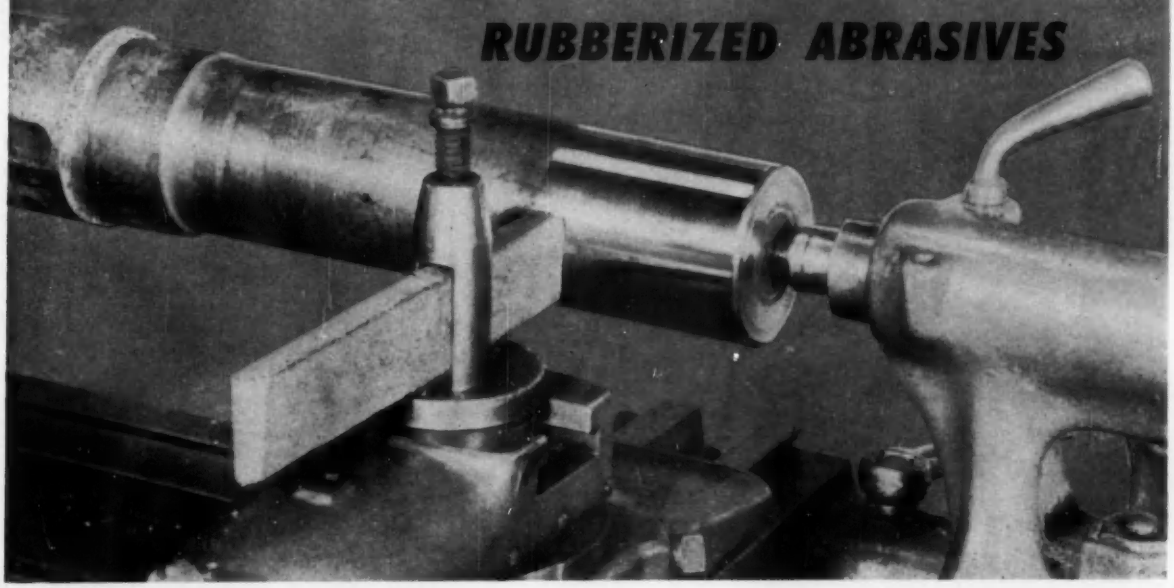

MILK PROCESSING EQUIPMENT

Polishing hard to reach spots on stainless steel with grinding wheels and emery paper proved too slow with poor results. Cratex cones Nos. 1340-C, 1359-C, 1340-M and 1359-M produced a highly polished, scratch-free surface much faster. Easy cleaning and less danger of bacterial contamination resulted.

Field Application Report #121

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Final finishing of molds for glass reinforced plastic articles was unsatisfactory for efficient pressure molding and product appearance. Cratex 112-M and 216-M wheels and 1358-M cones produced the required fine finish and greatly reduced or eliminated finishing on molded articles and improved product appearance.

Field Application Report #115

In virtually every metal working operation where a high degree of surface smoothness is required, Cratex Rubberized Abrasives lower costs and improve quality. They are used successfully on hard and soft metals . . . for deburring, smoothing and polishing . . . in tool and die shops . . . on production lines . . . and in the full range of machined and fabricated metal products.

Use Cratex to replace many slow, hand operations, to increase dimensional control, and to eliminate many multi-step operations. Cratex lowers costs, saves time and rejects because it finishes faster, more smoothly, and with minimum danger to tolerances. Order Cratex in Wheels, Points, Blocks, Sticks or Cones—in four grit textures.

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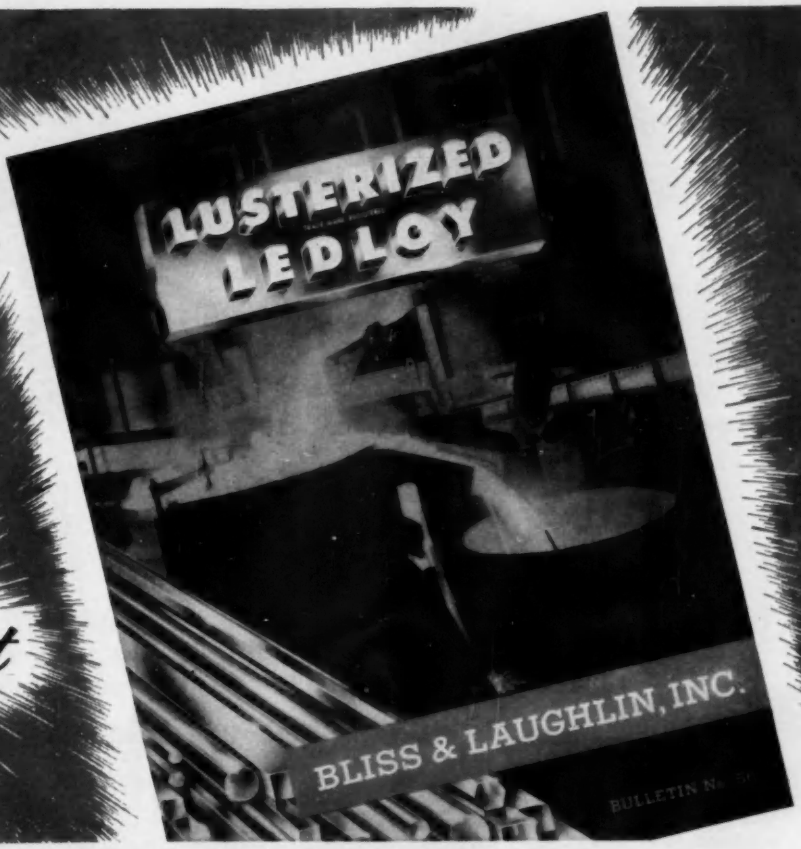

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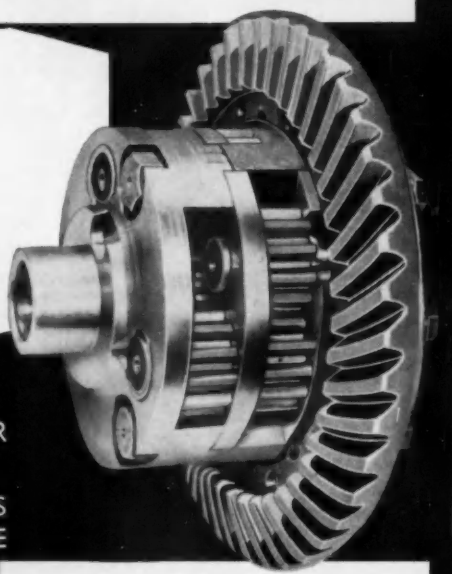

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Approx.	80	10	80	20
	88	10	84	30
	70	10	82	40
	96	10	100	50
	92	10	92	60
	78	10	76	70
	88	10	90	80
	76	10	80	90
	102	10	100	100
	105	10	108	110
	92	10	97	120
	68	10	70	130
		10	0	140

Annoying stalls resulting from one wheel spinning in snow, mud and on ice covered surfaces are eliminated by the transfer of power between rear wheels controlled by the Dualoc Differential. Vehicle positively will move out of stalled position if either wheel has traction or up to the critical point where both rear wheels spin.

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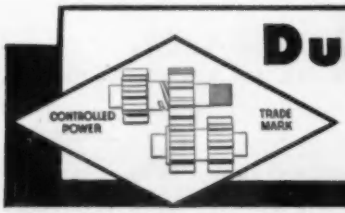
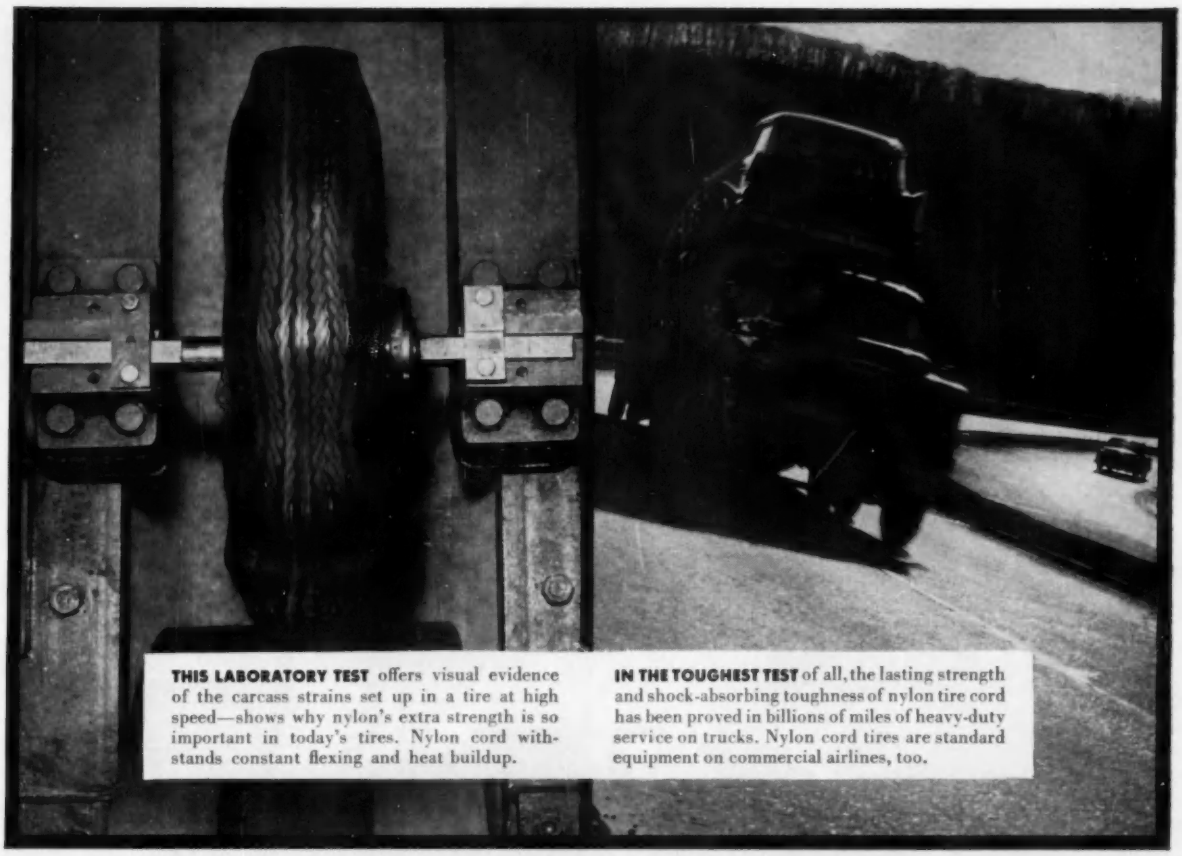


Dualoc Drive, inc.

700-20th St., Rockford, Ill.

Manufacturers of Fine Power-dividing Differentials



THIS LABORATORY TEST offers visual evidence of the carcass strains set up in a tire at high speed—shows why nylon's extra strength is so important in today's tires. Nylon cord withstands constant flexing and heat buildup.

IN THE TOUGHEST TEST of all, the lasting strength and shock-absorbing toughness of nylon tire cord has been proved in billions of miles of heavy-duty service on trucks. Nylon cord tires are standard equipment on commercial airlines, too.

TEST AFTER TEST PROVES NYLON TIRE CORD GIVES EXTRA STRENGTH FOR EXTRA SAFETY

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The lasting strength and safety of nylon tire cord has been proved in the laboratory and on the highway. Nylon cord withstands the added strains of today's more powerful cars and the sustained speed permitted on superhighways. Nylon cord protects against the four major causes of blowout: heat, moisture, flex fatigue and bruise damage—gives motorists the added safety and dependability they want in a tire.

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Du Pont produces the nylon fiber.
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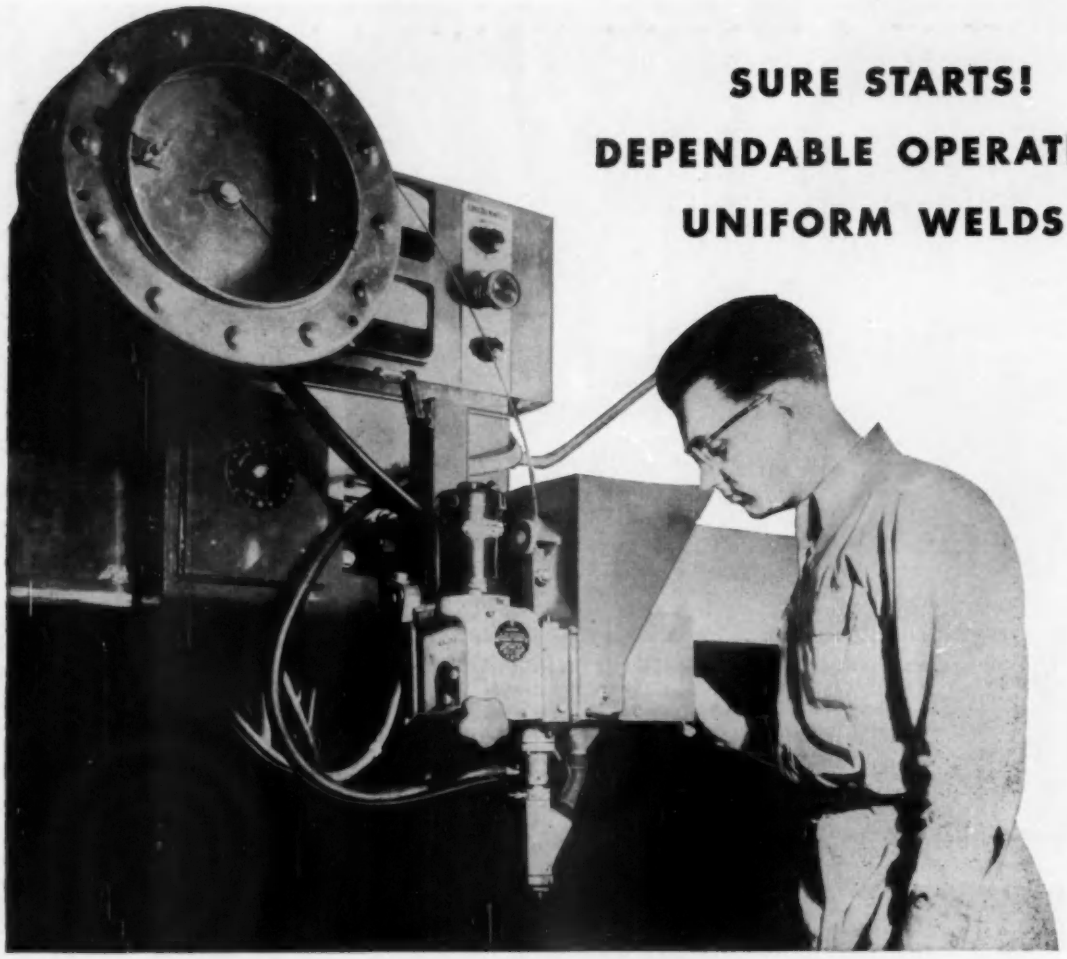

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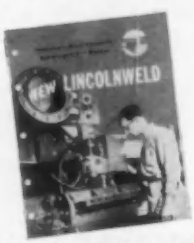

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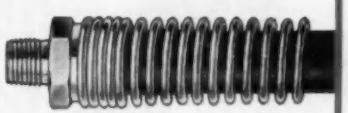

AIR COMPRESSOR DISCHARGE LINES—2800 Air Compressor Discharge Hose with Reusable Fittings is designed to withstand temperatures up to 500° F. without becoming brittle or cracked and to minimize carbon pickup, a major cause of line failure. In sizes up to 1¼"; for pressures up to 125 psi.

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new clutch is adaptable to all torque needs

* By varying the number of springs in multiples of three, *Lipe* can adapt the five sizes of its new Direct Pressure Clutch to all engines developing from 300 to 1300 ft-lb of torque. For example: depending on its service, a 15" DP can be furnished with its full complement of 27 springs . . . or only 24, 21, 18, or 15.

The advantages of this unique *Lipe* feature are obvious. Manufacturers will find it may be possible to standardize on a single clutch size to meet *all* torque requirements. Fleet Owners will notice the significant reductions in maintenance since clutches won't be under- or overloaded.

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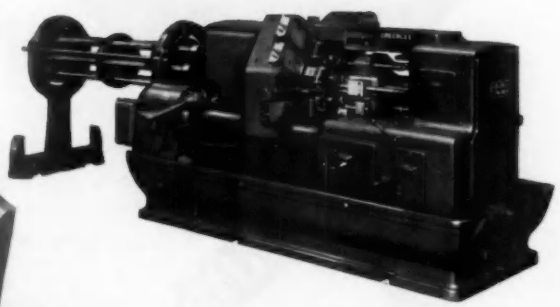

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GIVES 50 TO 1 SPEED RANGE—1/2 OF 1% REGULATION

The Drive Motor is also the Tachometer

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increase production—at less cost than any other method—because you can use the correct speed for each operation.

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Boost Production—
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"Brain" Power Panel Uses drive motor's counter EMF as speed signal and delivers full wave rectified power to drive motor.

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DC Drive Motor It's a standard 240 volt shunt-wound motor.

FEATURES

Motor speed will not vary more than ½ of 1% of rated speed.

Smooth, stepless, adjustable speed range 50 to 1.

Full motor torque over the complete range.

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Available in 5 sizes—¾ through 3 hp.

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New lightweight . . .

Fabricated steel brake shoes weigh many pounds less than cast shoes. Binding or freezing up is eliminated because double web construction permits limited area fit with one piece cam rollers. Wear areas of the webs are heat treated for long life.

Unit-mounted . . .

All brake parts are mounted on the spider for compactness. Efficiency is higher and correct cam shaft alignment is assured with close coupled cam shaft and chamber bracket.*

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designed for heavy-duty automotive service

Here is a brake that gives longer, trouble-free service for trucks, trailers, and all types of industrial and road equipment. These heavy-duty "P" Series Brakes are easy to maintain in service. Simplicity of design is the keynote—with brake, air chamber, and cam shaft all mounted as a unit.

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Please send me further information on your "P" Series Brake.

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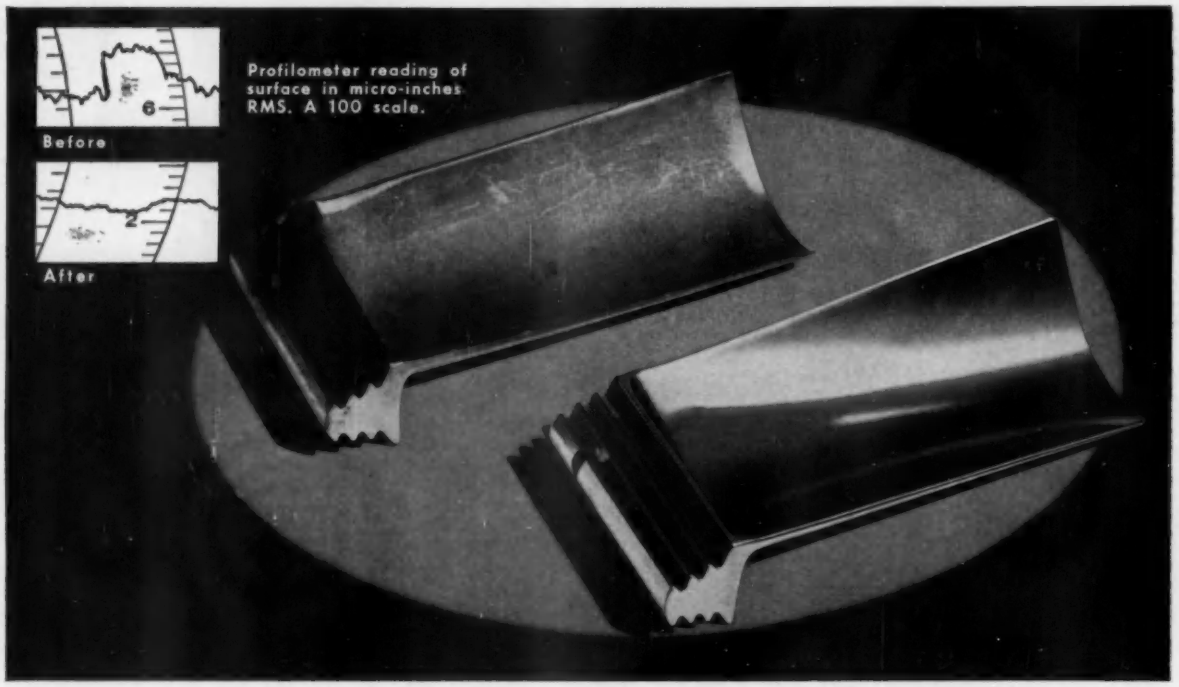

Cut parts finishing costs, maintain exact tolerances, get absolute uniformity with *Roto-Finish* processes

Roto-Finish, pioneers in precision barrel finishing, offer you a complete finishing service. Savings on deburring, descaling, grinding, polishing, coloring and surface improvement are tremendous. Expensive hand finishing methods can be eliminated.

Roto-Finish processes are controlled to produce the finish you need with no significant dimensional changes. You get absolute uniformity of finish in quantity lots.

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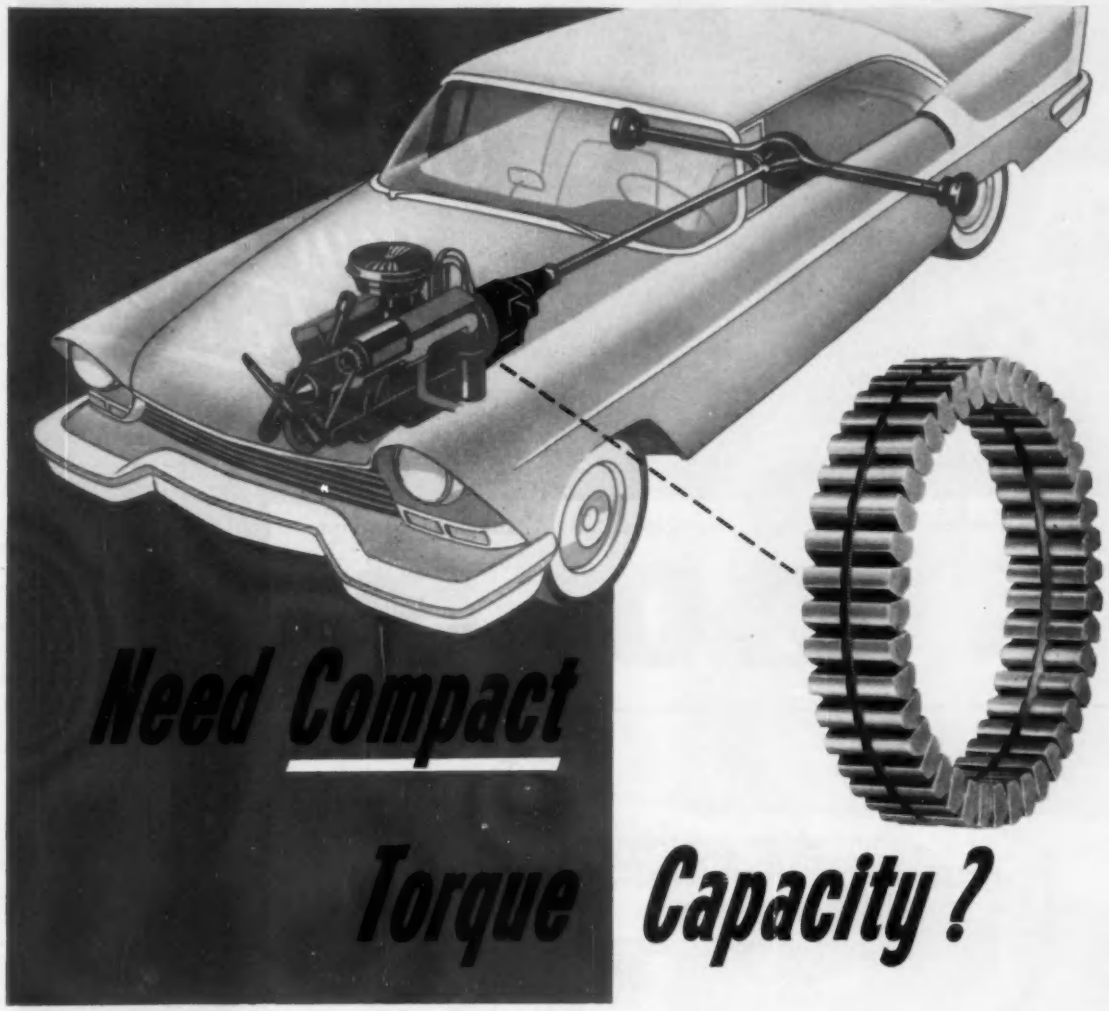

Formsprag Full-Complement Over-running Clutches eliminate artificial spacing and built-in drag

In automotive, aircraft, truck and farm implement power transmission applications — designers are exceedingly aware of the need for increased torque capacity in less space.

Formsprag Clutches provide a positive solution. The backbone of these over-running clutches is the exclusive, highly-developed sprag. Due to their construction, a full-complement of sprags can be fitted into a given space . . . *and they space automatically.* The result: Greater engine torque capacity is transmitted and the unit is compact.

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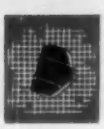
As the pioneer in the manufacture of sprag clutches, Formsprag offers the finest in precision manufacture and design facilities. Simple, basic design makes them ideal for economical prototypes for testing. *Complete* clutches are a specialty.

"Need Compact Torque Capacity?" Call on Formsprag—World's largest exclusive manufacturer of over-running clutches.

FORMSPRAG COMPANY



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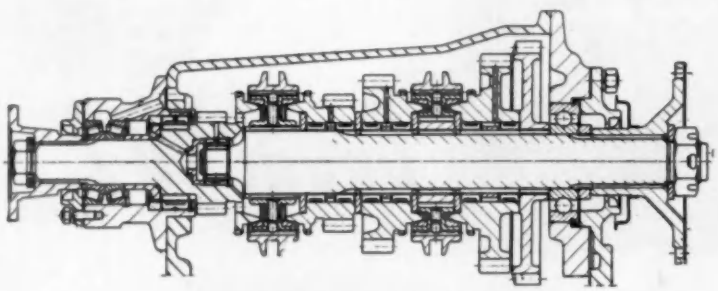
Still in the lead

loose needles | needle cartridges | complete bearings



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NEEDLE BEARINGS

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Flat Blanks to Finished Cylinders...

Higher Production Better Quality

one of the nation's foremost producers of cylinders for compressed gases

—NORRIS-THERMADOR CORP.—

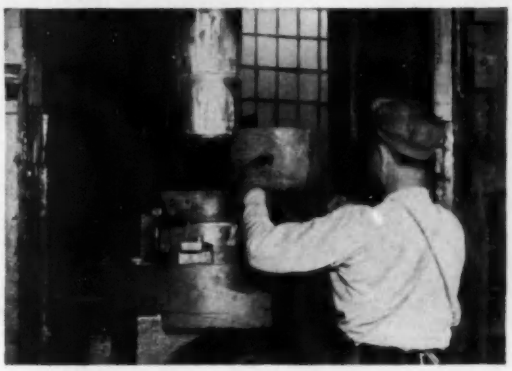
uses Parker's aids to cold forming

The Bonderite and Bonderlube combination provides effective lubrication and acts as a non-metallic parting layer between work and dies. More severe deformations are possible, reducing the number of press operations and process anneals necessary. Die life is lengthened and surface finish improved.

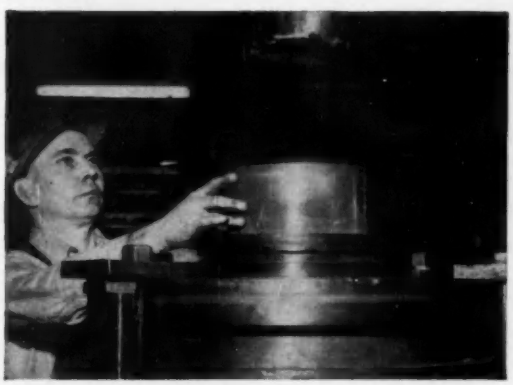
Bonderite and Bonderlube, by more efficient lubrication, help plants reach new production levels, get more efficient and economical production, and achieve better, more uniform quality.

Parker's cold forming experience in many plants and on many products is available to apply on your cold forming problems at once. Write or call today.

Cupping: Flat CO_2 cylinder blank, treated with Bonderite and Bonderlube, is changed into cylindrical form, with maximum of about 45% reduction in diameter of blank.



First reduction: Diameter of cup is made smaller and length increased without major change in wall thickness.



Second reduction: Final diameter of part with respect to length determines number of reductions required. Photos courtesy NORRIS-THERMADOR Corporation, Los Angeles, California.

FREE TECHNICAL BULLETIN MAILED ON REQUEST

Illustrated technical bulletin "Bonderite and Bonderlube As Aids In Cold Forming" contains detailed information. Mailed free on letterhead request.

Since 1914 — leader in the field

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BONDERITE	BONDERITE and BONDERLUBE	PARCO COMPOUND	PARCO LUBRITE	TROPICAL
corrosion resistant paint base	aids in cold forming of metals	rust resistant	wear resistant for friction surfaces	heavy duty maintenance paints since 1883

**Bonderite, Bonderlube, Parco, Parco Lubrite, Parker Pre-Namel—Reg. U.S. Pat. Off.*

RESULT: Better Finish at Lower Cost

In addition to the long recognized advantages of Eaton Permanent Mold Gray Iron Castings, the use of shell coring gives an even greater uniformity of structure and an improvement in internal surface finish. This results in machining economy and fewer rejections, which, in the end, mean lower cost of finished parts.

If you have applications where more than ordinary quality is required, Eaton Permanent Mold Gray Iron Castings offer many advantages. Whatever your requirements, our engineers will be happy to work with you.

Send for Illustrated Descriptive Literature

Consider these Important Advantages

- ★ Intricately cored sections
- ★ Uniformity of castings
- ★ Higher machining feeds and speeds
- ★ Substantially increased tool life
- ★ Dense, non-porous, homogeneous structure
- ★ Freedom from inclusions
- ★ Excellent tensile strength
- ★ Ability to take high surface finishes
- ★ Freedom from leakage under pressure

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EATON MANUFACTURING COMPANY
FOUNDRY DIVISION
VASSAR, MICHIGAN

...lets one man handle work you'd pay a crew to do!

By putting new efficiency, safety and positive control into the hands of Towmotor lift truck operators you enable them to do a *bigger day's work, easier.* You let each one handle jobs you'd normally hire a *gang* to do.

Through modern Towmotor mass-handling each operator has the power to improve your profit picture, because the new Towmotor fork lift trucks multiply their productivity. Look over the new features that operators like best about our latest models—such as:

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- Off-center adjustable seating
- Double action hydraulic tilt
- Newly-improved power steering
- "3-second access" to engine
- Famed 12" reach for all controls

Before you decide on your next fork lift truck, we urge you to get all the facts on the newly-designed Towmotor units. Write to Towmotor Corporation, Cleveland 10, Ohio, today and ask for our new illustrated lift truck booklet—No. SP-23.

Leaders for 38 years in building Fork Lift Trucks, and Tractors

TOWMOTOR THE ONE-MAN-GANG® **-GERLINGER**

Gerlinger Carrier Company, Dallas, Oregon, is a subsidiary of Towmotor Corporation, Cleveland, Ohio

Quantity PRODUCTION *of* GREY IRON CASTINGS

ONE OF THE NATION'S LARGEST AND MOST MODERN PRODUCTION FOUNDRIES

ESTABLISHED 1866

THE WHELAND COMPANY

FOUNDRY DIVISION

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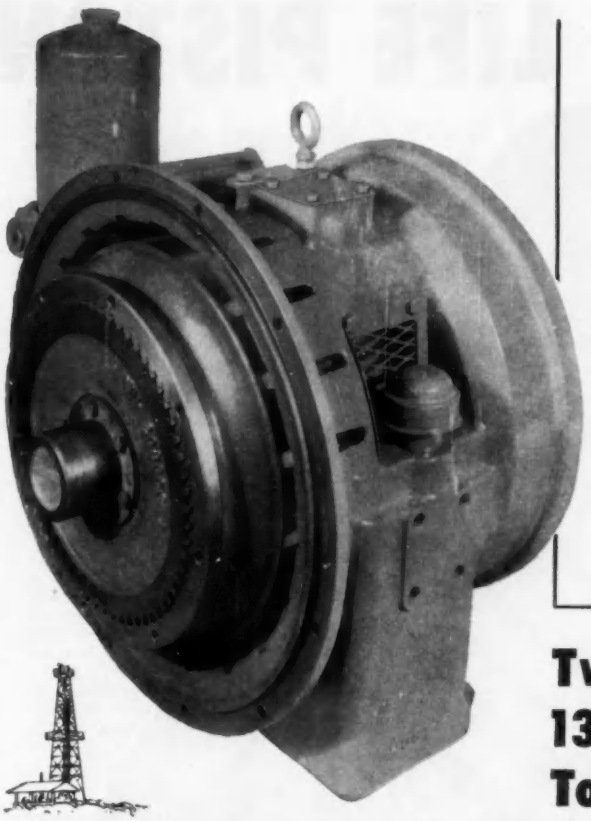
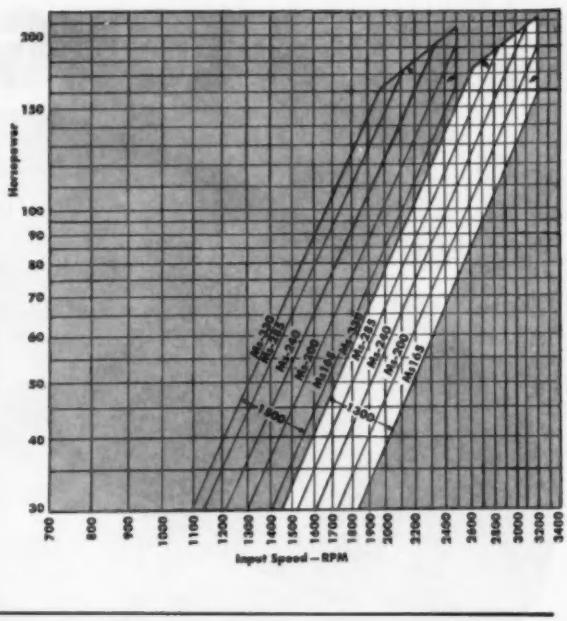
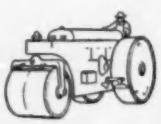




Twin Disc offers new 1300 Series Single-Stage Torque Converters



To meet the growing trend toward higher speed diesel and gasoline engines, Twin Disc Clutch Company announces its new 1300 Series Single-Stage Torque Converters . . . a series that offers ideal torque ratings for shovels, materials handling equipment, small industrial locomotives, front-end loaders, hoisting machinery, road rollers, graders and many similar applications.

The new 1300 Series Single-Stage Torque Converters are rated from 30 hp at 1450 rpm to 212 hp at 3200 rpm . . . with impellers available for specific torque ratings of 165, 200, 240, 285 and 330 pound-feet.

Current production of the 1300 Series consists of one model—the Model "F." This is a spacer-type arrangement with an SAE No. 2 flywheel housing size and either an SAE No. 2 or No. 3 output housing.

Like the Twin Disc 1500 Series Single-Stage units, the 1300 Series has an exclusive blade design which develops a counter-head at high-speed ratios, stopping fluid circulation. This simplifies design and construction and eliminates the need for a free-wheeled stator.

Impellers having different bladings (both number of blades and pitch) are interchangeable, permitting torque capacities to be matched more accurately to engines of various hp sizes and speeds.

The 1300 Series cooling requirements are minimized because of a rotating impeller housing which provides air circulation through the ventilated stationary housing.

If you've been considering a torque converter in your machinery designs, or are dissatisfied with your current single-stage units, investigate today the benefits offered by the new Twin Disc Single-Stage Torque Converters. Write for Bulletin 508 Supplement.

TWIN DISC

TWIN DISC
Torque Converters

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

Branches or Sales Engineering Offices: Cleveland • Dallas • Detroit • Los Angeles • Newark • New Orleans • Tulsa

new LONG LIFE PISTON

Puts CAST IRON WEAR IN TOP RING GROOVE

G and E Wire Insert Piston before machining (left) and after ring grooves are cut (right) showing how the steel wire forms a tough wear-resistant surface on both faces of top ring groove. The patented ferrous plug molded in the head (for diesel pistons) prevents burning through head and lengthens diesel piston life!

G and E WIRE INSERT PISTONS

- ★ Low initial cost
- ★ Light weight
- ★ Amazing increase in piston life
- ★ Maintains new engine power and performance

This Gillett & Eaton exclusive steel wire insert is cast right into the alloy piston to make hard surfaces for the top ring groove. Here's an entirely new piston design combining all the advantages of aluminum alloy with the long life of steel wire bearing surfaces in the top ring groove. No noticeable increase in weight. G and E Wire Insert Pistons are real top performers at Low Cost—barely more than ordinary alloy pistons!

When the grooves are machined, the closely spaced steel wire inserts cast in the piston become hard bearing surfaces on top and bottom faces of the groove. The wire insert also strengthens the second ringland.

Engines fitted with Gillett & Eaton Wire Insert Pistons *maintain* new engine power and performance much longer because top ring groove wear is greatly reduced. Build extra volume and profits at Low Cost with Gillett & Eaton Wire Insert Pistons.

GET THE G AND E WIRE INSERT STORY—Send your specifications and requirements—let us quote you.

GILLETT AND EATON, INC. 841 DOUGHTY STREET • LAKE CITY, MINN.

G&E

ESTABLISHED 1868

Studs for NELWELD process machined from Youngstown cold finished bars

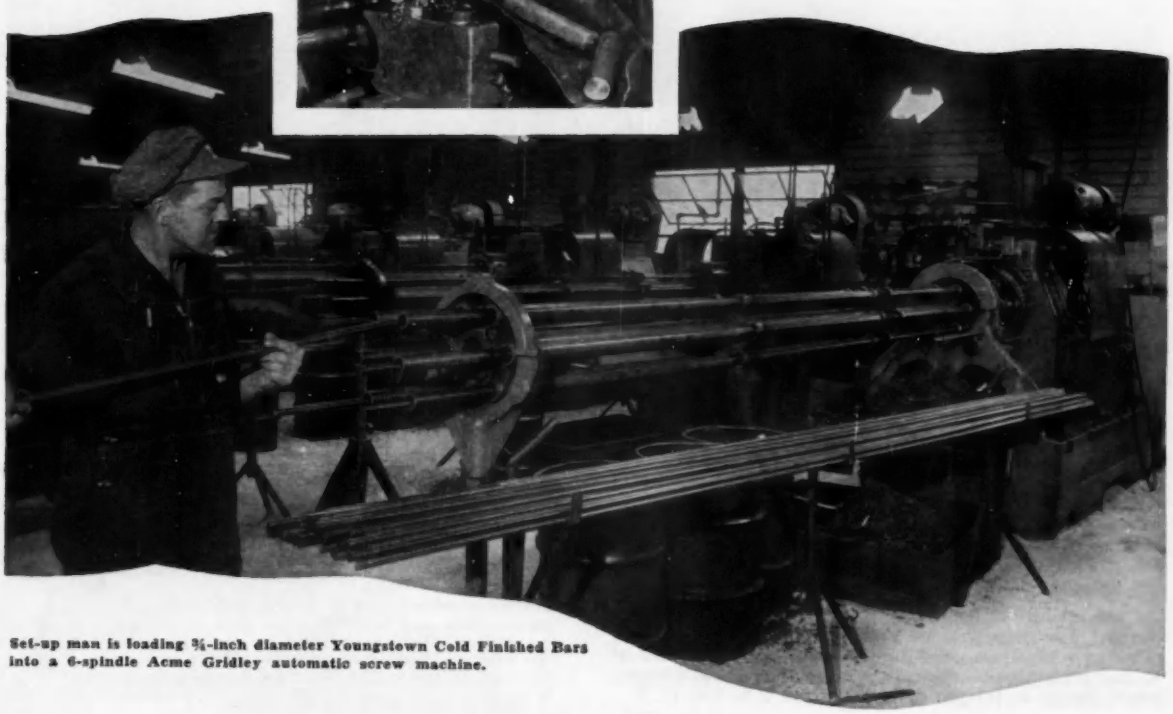
Progressive fabricators rely on the Nelweld method for fast, dependable end-welding of studs to steel surfaces. This novel electric arc process—utilizing flux-filled steel studs—substantially reduces direct fastening costs when used to replace conventional time-consuming methods such as drilling, tapping, hard welding, through-bolting or the securing of straps and rivets.

To maintain their world-wide reputation for product quality and uniformity, Nelson Stud Welding, a division of Gregory Industries, Inc., uses Youngstown Cold Finished Bars as the basic material for stud production.

Youngstown Cold Finished Bars provide high machinability and greater uniformity of composition, structure and surface finish to help you increase production of more uniform parts. Always specify Youngstown—it's your best assurance of quality.

Why not call or write your nearest Youngstown District Sales Office today for additional information or metallurgical assistance?

Close-up of studs being bored to accomodate their charge of flux (top collet) and then cut-off (center collet). Two finished Nelweld studs, shown in the pan in foreground, were machined simultaneously in the 6-position machine. First operation—feed out and face; second—bore; and third—cut-off.



Set-up man is loading ¾-inch diameter Youngstown Cold Finished Bars into a 6-spindle Acme Gridley automatic screw machine.

THE YOUNGSTOWN SHEET AND TUBE COMPANY
Manufacturers of Carbon, Alloy and Yoloy Steel
General Offices - Youngstown 1, Ohio
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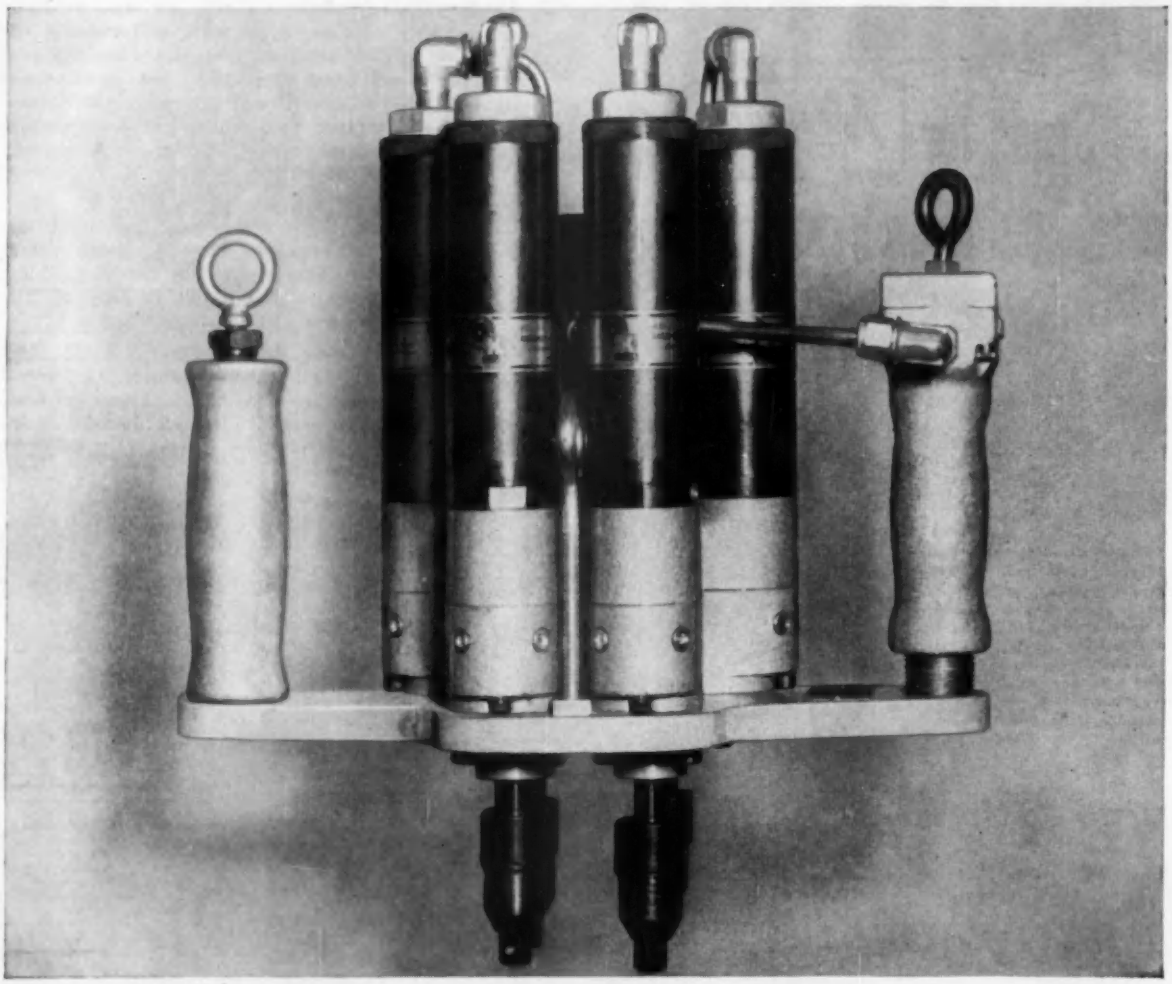
QUALITY YOUNGSTOWN SERVICE

Cold finished bars



4 to 1 you'll increase output with KELLER "spindle gang"

With a flick of his thumb, the man with the *new* Keller multiple-spindle tool drives four screws at the same time. As a result, his output increased while production costs decreased.

The new medium low-torque (2 to 24 foot-pounds) Keller tool is *made to order from your assembly blueprints*, with any number of spindles. Yet tool cost is relatively low. Only the mounting plate is specially shaped and drilled. Motors and other stock components are standard designs adapted to job requirements.

Convertibility, flexibility of design, uniform torque control, low maintenance and low operator fatigue are winning a place on assembly lines for the entire line of Keller multiple-spindle nut setters and screw drivers, which range in torque delivered from 2 to 190 ft. lb.

Confer with a Gardner-Denver man about increasing your assembly production with Keller multiple-spindle tools. Or write for complete information.

Keller "K-MATIC"* drilling unit is *new*, too!

Combines advantages of mechanized feed drilling machine and portable hand drill. Designed for drilling clean, true holes in hard metals—like titanium, stainless steel, etc. Made to handle drills 3/8" or smaller. Send for free descriptive folder.

*Trade-Mark

GARDNER-DENVER

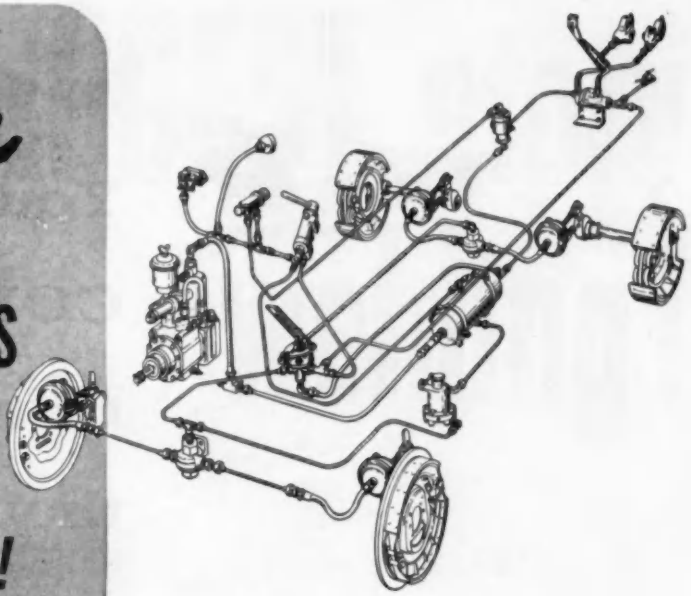
Gardner-Denver Company, Quincy, Illinois

THE QUALITY LEADER IN COMPRESSORS, PUMPS, ROCK DRILLS AND AIR TOOLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

Wagner

STRAIGHT AIR BRAKE SYSTEMS

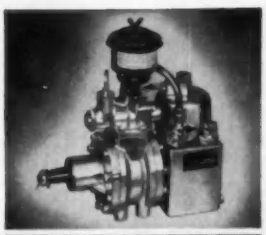
provide safe, sure stops for cam type brakes!

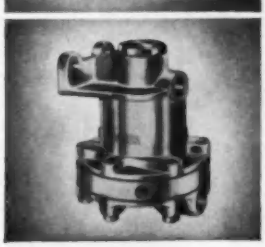


Wagner Straight-Air Brake actuating systems give cam type foundation brakes the ability to make quick, safe stops—completely controlled by the driver. They are furnished plenty of air at all times by the Wagner Rotary Air Compressor. The actuating units and application valves are *positive* in operation—performance-proved on many thousands of installations.

Wagner Air Brakes are the product of more than thirty years of brake engineering experience—gained in the designing and building of brake systems and brake parts for the automotive industry. When you equip the heavy-duty vehicles you manufacture with Wagner Air Brakes, you are adding safety and low-maintenance features that build customer acceptance.

Get all the facts on the Rotary Compressor and other features that make Wagner Straight-Air Systems so dependable and so safe. Write for your free copy of Catalog KU-201—it gives all the facts you should know about Wagner Air Brake Systems.





features include:

WAGNER ROTARY AIR COMPRESSOR—provides an abundance of air at all times. Its cool operation prevents carbon formation in air lines. Uniform torque load and smooth operation with moderate stresses assure long compressor life and long belt life.

WAGNER BRAKE CHAMBERS—have diaphragms of neoprene rubber bonded to high-tensile-strength nylon fabric for superior oil resistance and maximum strength and flexibility. Available with or without push-rod seal. All brake chamber parts are of corrosion-resistant material, or are plated to prevent rusting. Wagner Brake Chambers are interchangeable with all clamp type and bolt type units equipped with standard mounting studs, regardless of make.

WAGNER MOISTURE EJECTION VALVE—automatically keeps air reservoirs clean and dry by ejecting accumulated moisture with each average brake application—without causing a noticeable drop in tank pressure.

K57-11

Wagner Electric Corporation
6363 PLYMOUTH AVENUE, ST. LOUIS 14, MO., U. S. A.
(Branches in principal cities in U. S. and in Canada)

LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • HoRoL • CoMoX BRAKE LINING • AIR BRAKES • AIR HORNS • TACHOGRAPHS • ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES

Your "STAR CONTACT MAN" counts his calls by thousands

Imagine a device that can equal the work of thousands of skilled men. Impossible? Perhaps it is, but industrial advertising—your "star contact man"—may easily make as many calls as 10,000 flesh and blood salesmen—or more.

Complete coverage of customers and prospects by the average industrial salesman—a skilled technician in his own right—requires many more hours than he has available. Particularly, if he must first sell his company name and explain the nature of its products.

To clear the way for the salesman by gaining broad recognition for his company and its products, manufacturers wisely turn to industrial advertising.

Never a substitute, but rather an essential and economical supplement to personal salesmanship, industrial advertising maintains relationships with present customers and helps to develop new ones.

Put industrial advertising on your "payroll." Make it a part of your selling team.

NATIONAL INDUSTRIAL ADVERTISERS ASSOCIATION, INC.

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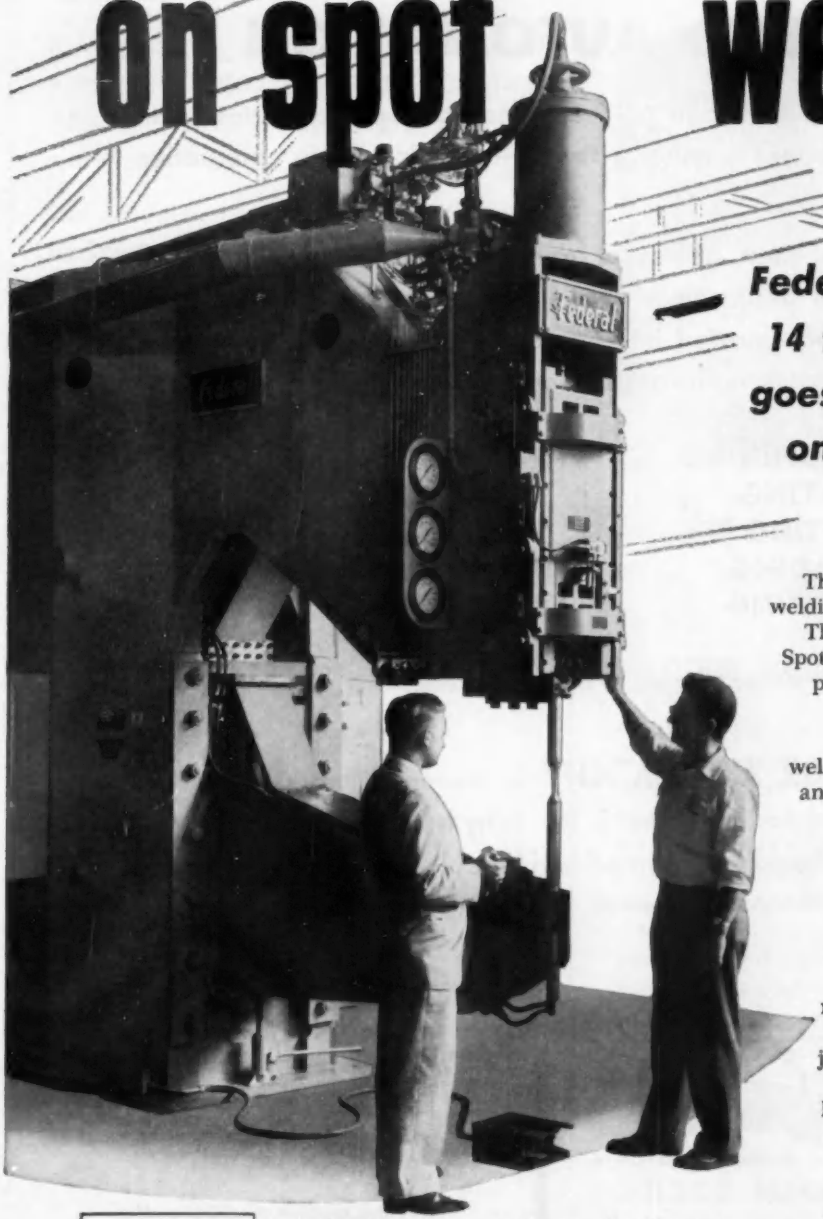
An organization of over 4000 members engaged in the advertising and marketing of industrial products, with local chapters in ALBANY, BALTIMORE, BOSTON, BUFFALO, CHICAGO, CLEVELAND, COLUMBUS, DALLAS-FORT WORTH, DENVER, DETROIT, HAMILTON, ONT., HARTFORD, HOUSTON, INDIANAPOLIS, LOS ANGELES, MILWAUKEE, MINNEAPOLIS-ST. PAUL, MONTREAL, QUE., NEWARK, NEW YORK, PHILADELPHIA, PITTSBURGH, PORTLAND, ROCHESTER, ROCKFORD, ST. LOUIS, SAN FRANCISCO, TORONTO, ONT., YOUNGSTOWN.

...the BIGGEST story on spot welding!



Welding engineers testing record setting spot welder. Federal has been commissioned to build several more of these giants for aircraft manufacture.

Federal Built 14 ft., 28 ton giant goes into operation on west coast . . .

The biggest thing in aircraft spot welding—that's the huge new Federal Three Phase Frequency Converter Spot Welder designed to make spec plus welds on the tail section of a new commercial jet airliner.

More than 13 feet tall, the big welder weighs over 58,000 pounds, and has a special throat, or work clearance area, of some 2500 square inches.

The design and manufacture of the 12 ton unipolar transformer having an output in excess of 100,000 amperes and the requirements of meeting rigid deflection specifications on this large throat machine were just a few of the new problems encountered on this project. Federal experience and facilities once more provided the correct solutions.

Here again, is proof that large or small—standard or special—*Federal Stays First in Resistance Welding.*

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The Federal Machine and Welder Co.

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Radiators
42nd Year

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NEW HAVEN CONNECTICUT

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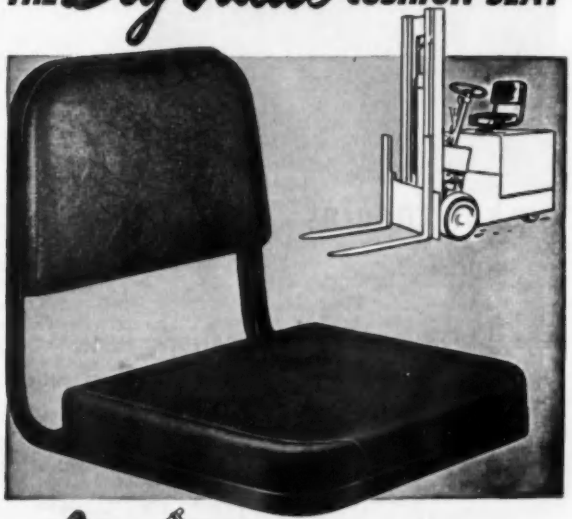
MILWAUKEE
SEATING

Thrift-King

THE Big Value CUSHION SEAT



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gasket failures

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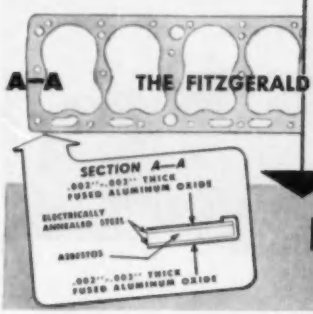

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FITZGERALD gaskets
SINCE 1906

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Have you investigated
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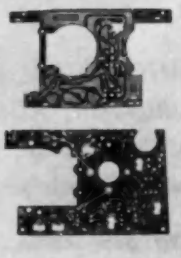
Applications Possessing High Density of Wire and Component Connections may Benefit by Utilization of PRINTED CIRCUIT PANELS



The printed circuit technique offers possibilities for advanced product design and manufacture through:

- *Mechanized assemblies*
- *Uniform lead dress*
- *Unit replacement*
- *Multiple soldering*
- *Simplification and integration of components*

FOR FULL INFORMATION ON HOW TO DESIGN FOR PRINTED CIRCUIT PANELS, WRITE ON COMPANY LETTERHEAD FOR THE SECOND EDITION OF THE HANDBOOK "UTILIZATION OF PREFABRICATED WIRING"

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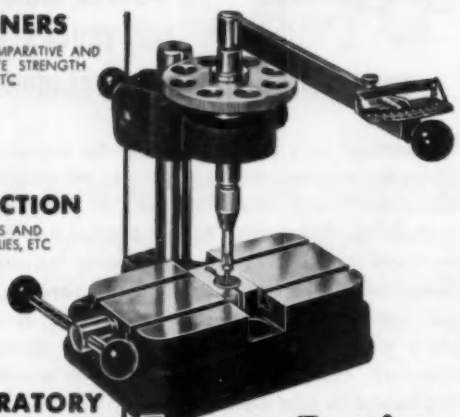
for DELICATE OPERATIONS, ASSEMBLY OF FRAGILE MECHANISMS OR INSTRUMENTS; FOR FASTENERS IN PLASTICS AND LIGHT METALS.



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A universal fixture with 1000 uses. Holds driver in accurate alignment; in instrument bearings. Provides rapid engagement with test sample...torque is applied and measured with Sturtevant Torque Wrench.

Model TTF¼ Capacity 0-200 in. lbs.
Model TTF½ Capacity 0-150 ft. lbs.

Write for Bulletin TF

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Lamicor opens the door to new product designs and construction methods

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DIMENSIONALLY STABLE, Lamicor is functionally superior to wood, steel, metals or mechanical combinations.

LIGHTER THAN ALUMINUM, Lamicor is stronger than steel. An ideal material where properties of strength and weight conflict.

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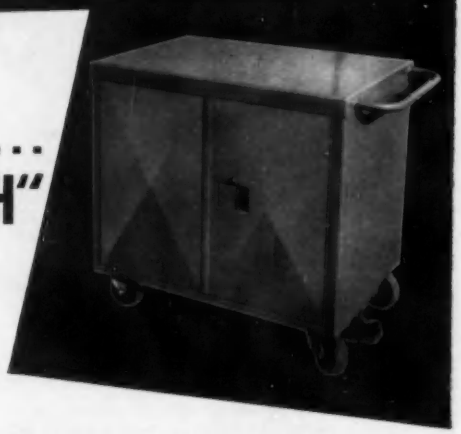
Tanks, liners, exhaust hoods and ducts, templates, frames, truck bodies and components, partitions, refrigerated doors for cold rooms, ships, railroads.

Available in sheets up to 48" x 96" x 2" thick angles, beams, channels or formed shapes to your specifications.

STRICK PLASTICS CORP.
P.O. Box 204
Perkasie, Pennsylvania

Now . . . a workbench where and when you want it! . . .

THE NEW MOBILE "ROLL-A-BENCH"



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A maintenance department on wheels! Here's a mobile work-bench that can be rolled to work location by one man . . . with compartments for tools and spare parts . . . with doors that can be locked.

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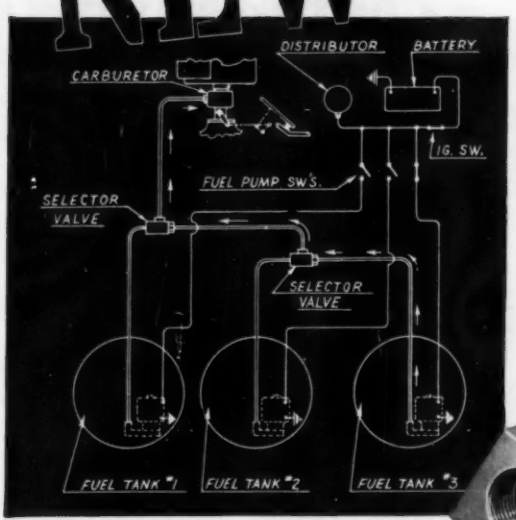

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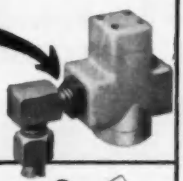

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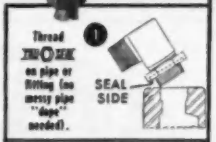
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SEAL SIDE
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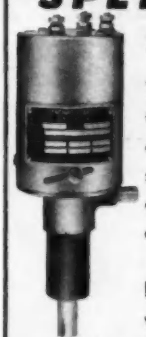

The Synchro-Start Models GH-2 and GS-2 governors contain two snap action switches to be used for opening or closing circuits at any RPM over 500.

They contain sealed ball bearings, are adjustable while running and are encased in a splash proof housing. These two switch governors are supplied for the standard SAE tachometer drive or distributor take-off and for AND20005 engine pad mounting (GA Series).

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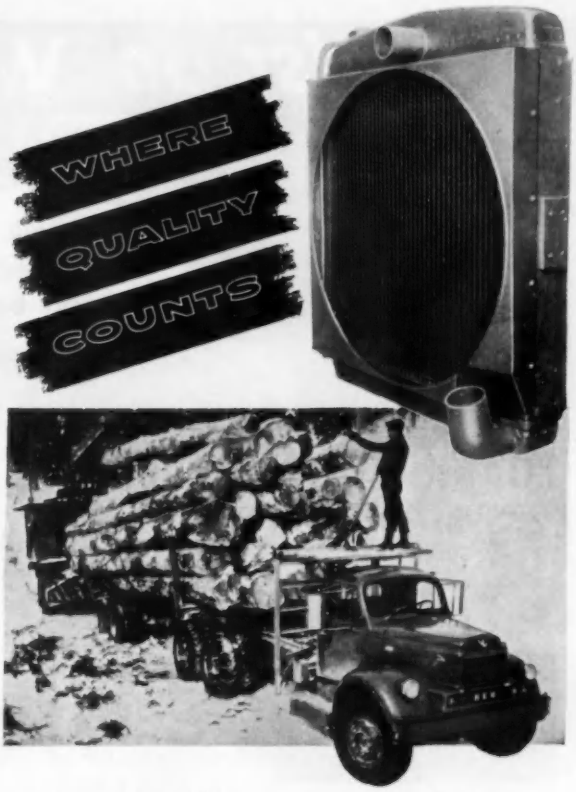
SAFETY ALARM SETS • D.C. SOLENOIDS • HEAVY DUTY RELAYS



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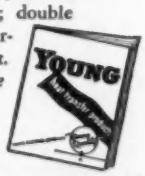

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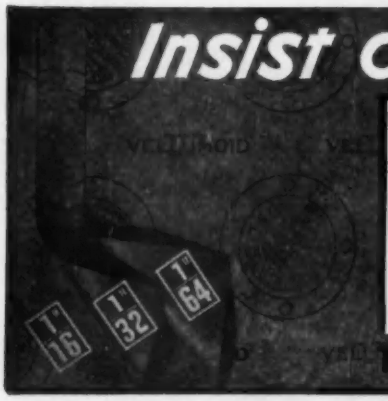

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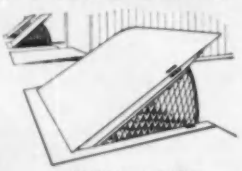

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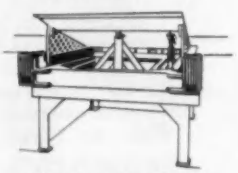

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Zollner 482

CLEAR-O-MATIC*

The All-Temperature Piston

UNIFORM SKIRT CLEARANCE FROM 20° BELOW ZERO TO 200° F

STEEL TENSION MEMBER

Anchored only at pin bosses and cast in positive contact with I.D. of piston skirt

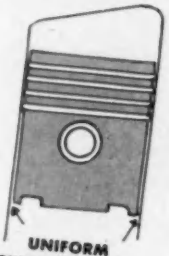
Controls Clearance Automatically

DESIGN ADAPTABLE TO FULL SKIRTED OR SLIPPER TYPE PISTONS FOR GASOLINE ENGINES FOR EVERY PURPOSE

Sensational Performance

Requires less than .001 Clearance

Cold or Hot, Clear-O-Matic Piston clearance stays constantly uniform. Required clearance is reduced to less than .001. This great development of the "All-Temperature" Piston by Zollner engineers provides another fine feature attraction for the modern motor car . . . smooth, quiet running engine . . . no cold slap . . . reduced friction without loss of durability or heat conductivity . . . no danger of scuffing or seizing. We suggest a test of these sensational performance advantages for your engine.



UNIFORM EFFECTIVE SKIRT CLEARANCE AT ALL TEMPERATURES

1. Clearance maintained uniformly at all coolant temperatures from 20° below zero to 200° F.
2. Effective expansion identical with ferrous cylinder.
3. Steel tension member, with same effective expansion as cylinder, maintains uniform skirt clearance through entire temperature range.
4. Normal diametric clearance usually less than .001 with uniform skirt bearing.
5. Durability and conductivity comparable to heavy duty design.

*T.M. Reg. Pat. App. For

ADVANCED ENGINEERING

PRECISION PRODUCTION

COOPERATION with Engine Builders

ZOLLNER PISTONS

THE ORIGINAL EQUIPMENT PISTONS

ZOLLNER

ZOLLNER · Fort Wayne, Indiana

6 REASONS WHY YOU SHOULD SPECIFY

SEMS BY Everlock®

Cut costs. Pre-assembled Sems eliminate separate washer handling — cut labor costs, speed assembly.

Always tight. Exclusive Everlock "set" chisel edge lock washer teeth guarantee a vibration-proof fastening.

Simplify ordering, stocking, inventory. One-piece Sems cut your lock fastening problems in half.

Sems assure "as specified" assembly. No more rejects due to omitted lock washers.

Sems eliminate waste due to lost lock washers.

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Always specify Everlock for the world's "holdingest" fasteners— Sems, Lock Washers, Lock Nuts, Terminals.

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How to cut bearing costs 14.6% or more

IN the face of rising costs, automakers can make substantial savings: by using the new Timken® Moto-Mated tapered roller bearings in millions of front wheels of 1957 cars. Savings of 14.6% or more in bearing costs!

Timken Moto-Mated bearings—a new breed of bearings—offer a whole raft of new advantages. They're smaller to permit more compact designs, make possible savings on related parts. Lighter to cut unsprung weight and improve the ride. Capacity-packed to take the loads of today's more powerful cars. Made with a new high in uniform quality. And they're lower cost because they're produced by the millions, by revolutionary new production line methods in a new kind of plant. Something entirely new in the bearing industry!

You can make immediate savings by adapting to the standardized Moto-Mated bearing sizes. And the savings will multiply as use of these new bearings extends to opinions, differentials, steering gears and other applications.

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TAPERED ROLLER BEARINGS

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